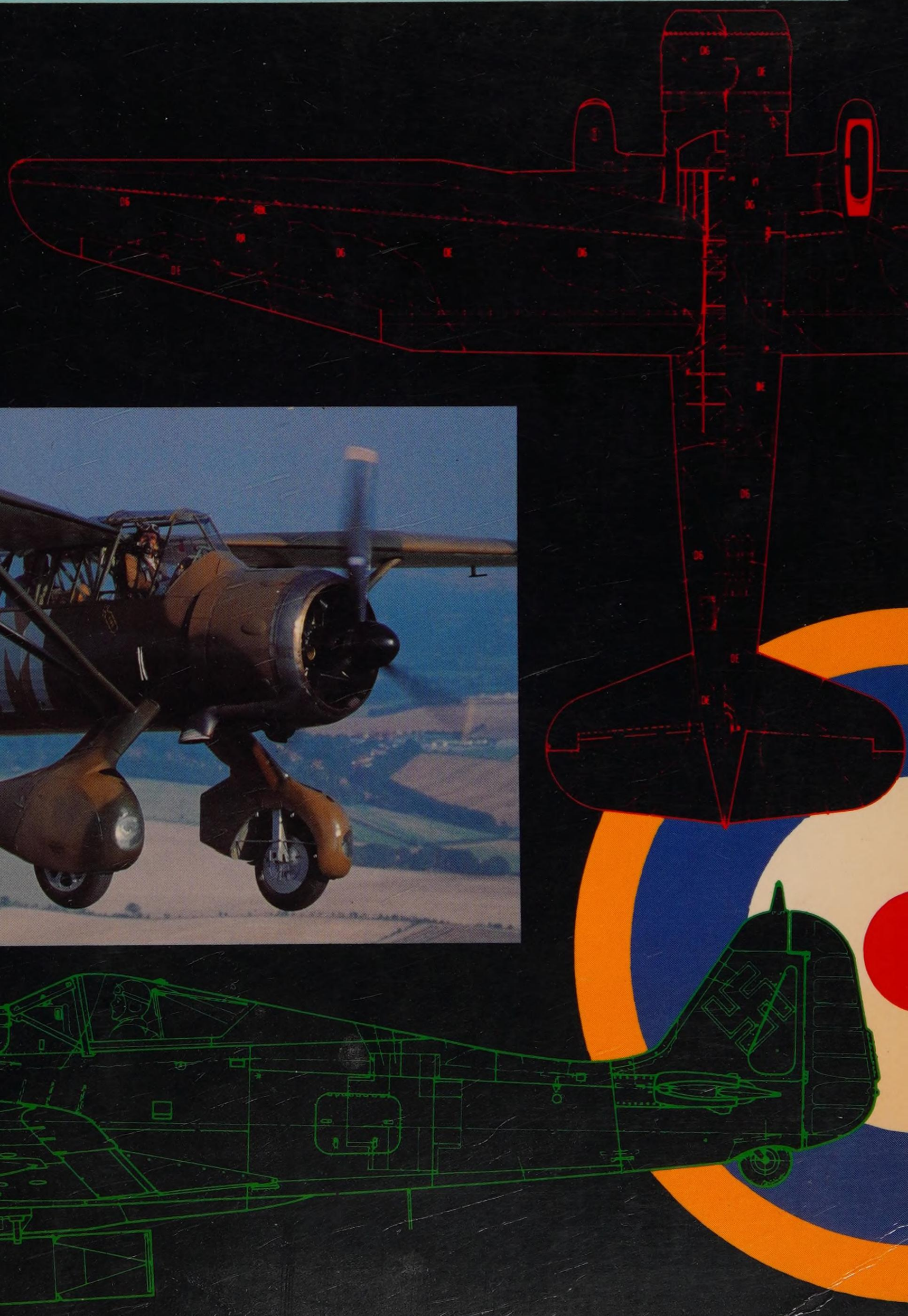
AIRCRAFT ARCHIVE

CLASSICS OF WORLD WAR TWO



A detailed collection of original scale aircraft drawings

AIRCRAFT ARCHIVE

CLASSICS OF WORLD WAR TWO

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Cover photo: Rebuilt by Personal Plane Services and operated by Wessex Aviation and Transport of Henstridge, the classic Westland Lysander flies again over Southern England. (Peter March)

AIRCRAFT ARCHIVE

CLASSICS OF WORLD WAR TWO

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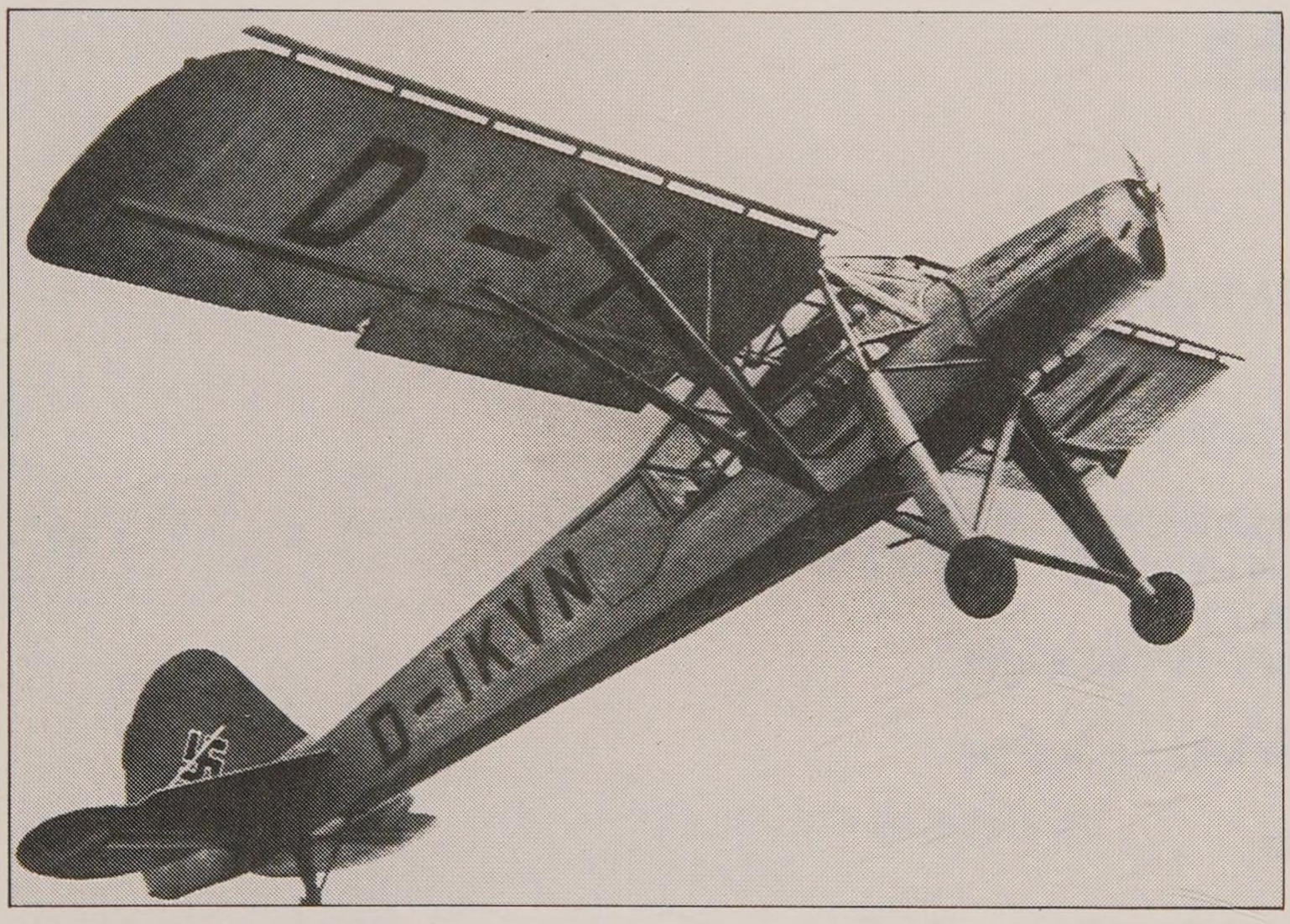
A DETAILED COLLECTION OF ORIGINAL SCALE AIRCRAFT DRAWINGS

Introduction

In this, the seventh in our series of volumes on aircraft of World War II, we cover those types which do not necessarily fall neatly into the category of fighter or bomber, or which might otherwise be regarded as 'classics' of design or achievement. They include trainers, reconnaissance aircraft, communications aircraft, fleet spotters, a couple of noteworthy 'one-offs', and famous fighters which became national symbols characterised by shape and valiant battle records in the defence of their country.

Every aviation enthusiast has a personal favourite, and this selection of eighteen drawings must surely embrace more than a few of those first-loves. Many a pilot has good cause to express affection for the first primary trainer on which the treasured 'wings' were won. So we have the De Havilland 82A Tiger Moth, which provided the backbone of Elementary Flying Training Schools in the UK, the Union of South Africa, Rhodesia and Australia, and the Boeing-Stearman Kaydet which did such yeoman service in the Airschools of Canada and the USA. One stage on, and the Bücker Bü 133 Jungmeister is on record as the finest mount for solo aerobatics of its time, while for long and amazingly varied application the Polikarpov Po-2 must be included as the most adaptable workhorse ever to carry Soviet stars.

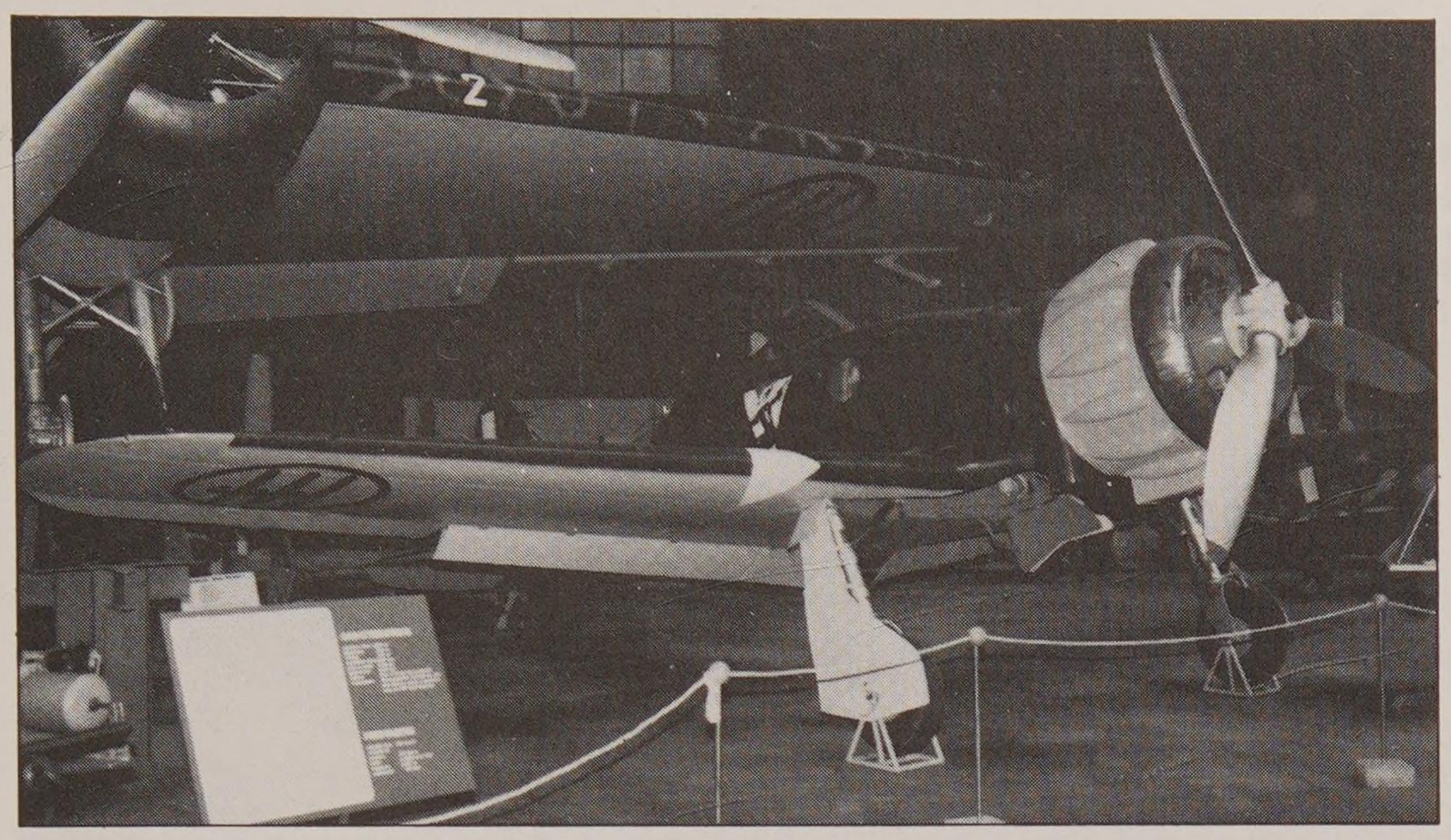


◄ The remarkable Fi 156 Storch was designed in 1935 and became a true workhorse of WWII. French-built Storchs are still flying, more than fifty years later. (IWM B7394)

For 'macho' shape, those monoplane fighters with open cockpits, the I-16 Rata and Macchi C200 Saetta, lend comparison with the heroic Polish PZL P-11c and the first (and last) of the German biplane fighters, the Heinkel He 51. Who can ignore those candidates for being slowest, the Storch and Lysander? Differing approaches to the same specification with similar achievement provide the aero-enthusiast with inspiration to model those daredevil tools of subterfuge.

One could go on – the elegant form of the Stösser, the last-ever biplane project in the Canadian Gregor and the encapsulated power of the Martin-Baker MB5 all demand study. But one aircraft stands above all, and for that reason, we allocate more space to the Focke-Wulf Fw 190. Drawn impeccably by Arthur Bentley to the most finite detail, this set of drawings represents the epitome of type-study and patient interpretation of remaining references as well as actual aircraft.

As we have mentioned in other volumes, every one of these drawings is a tribute to the skill and dedication of amateur researchers who produce something which very few of the manufacturers can provide! One such example is the Tiger Moth. Another which we dare claim as



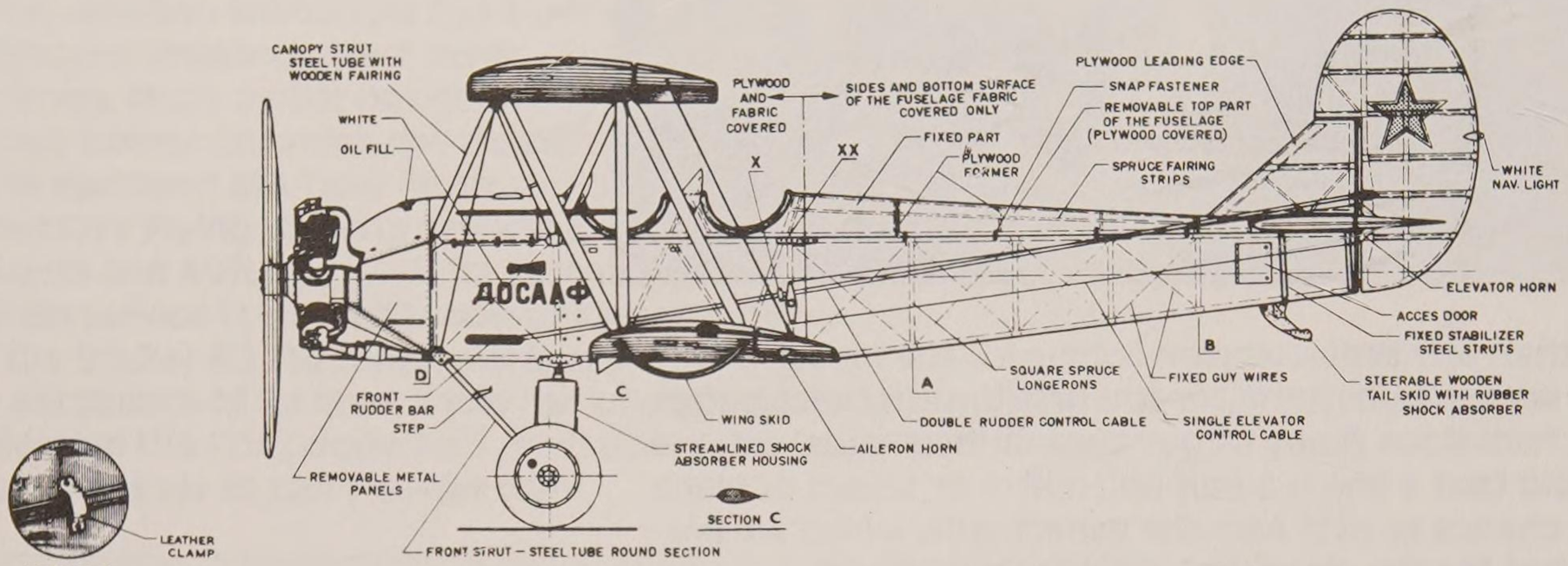
◀ The preserved Macchi C200 on display at the Vigna di Valle Air Force Museum near Rome. Detailed plans of this famous fighter can be found on pages 60–64.

being more correct than any previous plan is that for the Polikarpov I-16, a drawing which we are publishing for the first time in these pages. BUT – knowing how fastidious many of our aeronautical 'nuts' are, we quite expect to be told that a line is a half millimetre or so out of place before the ink has a chance to dry! Another aspect with which we are specially pleased is that for the eighteen drawings we have sixteen different draughtsmen whose work has appeared over the years in the pages of *Aeromodeller* and *Scale Models*, and it is with universal gratitude, from ourselves as publishers and from the readers as consumers, that we acknowledge the contribution made by Arthur Bentley, Maurice Brett, Dennis Bryant, George Cox, Tony Datkiewicz, Geoff Duval, Bert Hatton, Björn Karlström, Pat Lloyd, Bill Nicholls, Felix Pawlowicz, Dave Platt, Giuliani Raimondi, Harry Robinson, Ian Stair and Harry Woodman to the annals of aviation history.

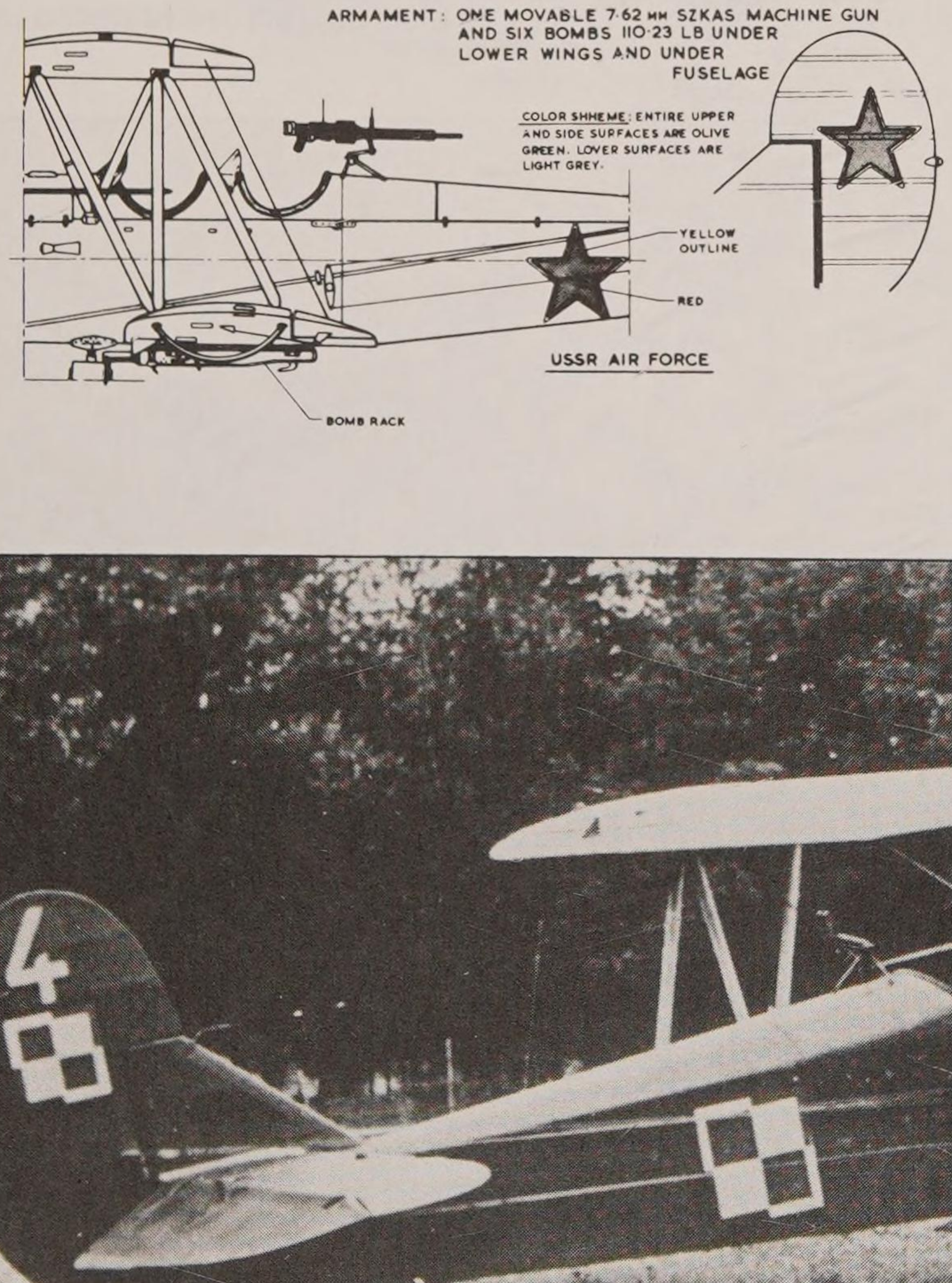
A *Jagdfliegerschule* prewar, showing Fw 56s (left), He 51s (right foreground) and Ar 65s in a mixture of *Luftwaffe* and civil markings; the Heinkel and Focke Wulf aircraft are featured in this volume.

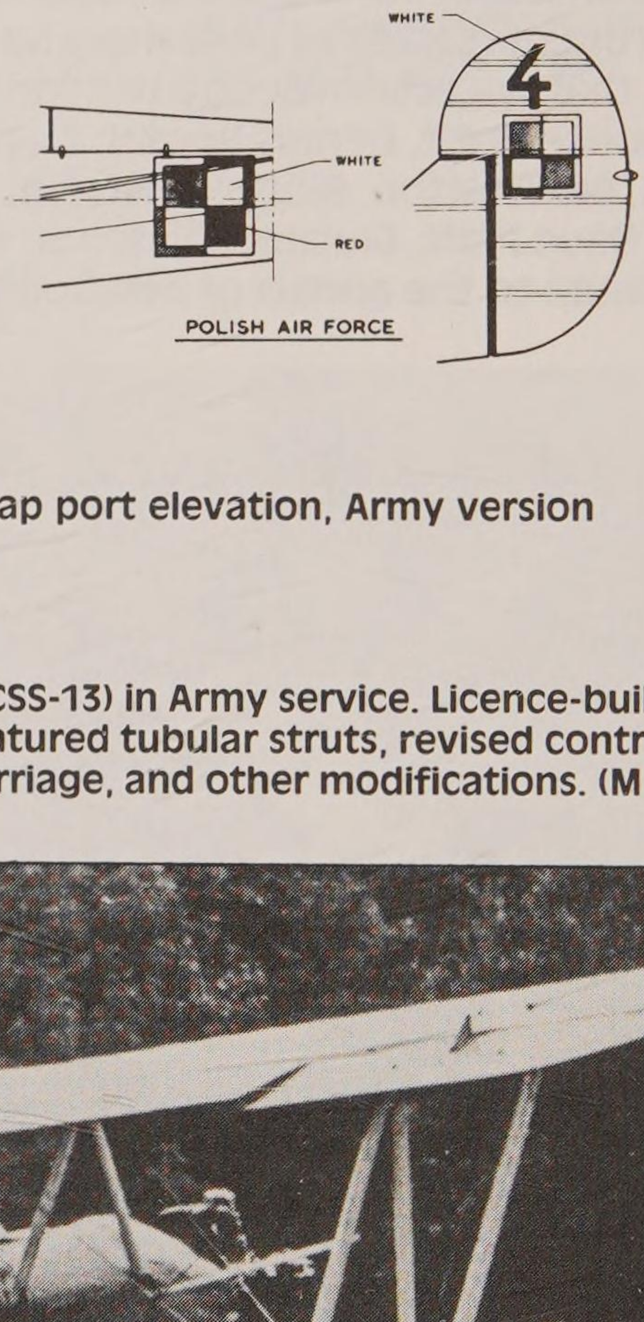
Polikarpov Po-2

Country of origin: USSR.
Type: Two-seat, land based training and general-purpose aircraft.
Dimensions: Wing span 37ft 4in *11.38m*; length 26ft 1in *7.95m*.
Weights: Empty 1918lb *870kg*.
Powerplant: One M-11 radial engine rated at 100hp.
Performance: Maximum speed 93mph *150kph*; service ceiling 12,530ft *3820m*; range 250 miles *400km*.
Armament: None as trainer; various light ordnance when used in offensive roles.
Service: First flight 1927.



▲ Port elevation, Standard aircraft

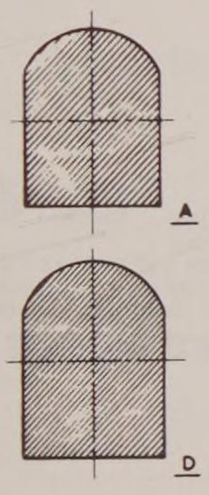

ARMAMENT: ONE MOVABLE 7·62 MM SZKAS MACHINE GUN AND SIX BOMBS 110·23 LB UNDER LOWER WINGS AND UNDER FUSELAGE
COLOR SHHEME: ENTIRE UPPER AND SIDE SURFACES ARE OLIVE GREEN. LOVER SURFACES ARE LIGHT GREY.
YELLOW OUTLINE
RED
USSR AIR FORCE
BOMB RACK



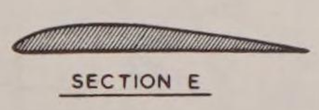
◄ Scrap port elevation, Army version

Polish Po-2 (CSS-13) in Army service. Licence-built Polish machines featured tubular struts, revised control surfaces and undercarriage, and other modifications. (M Passingham)
▼

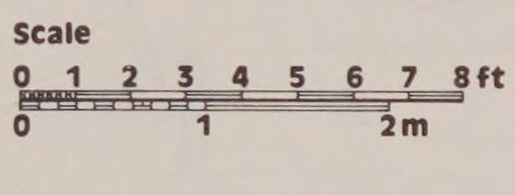
▲
Soviet Po-2 serving as a liaison and communications aircraft. The Po-2's flying surfaces were fabric covered, as were the sides and bottom of the fuselage. (M Passingham)

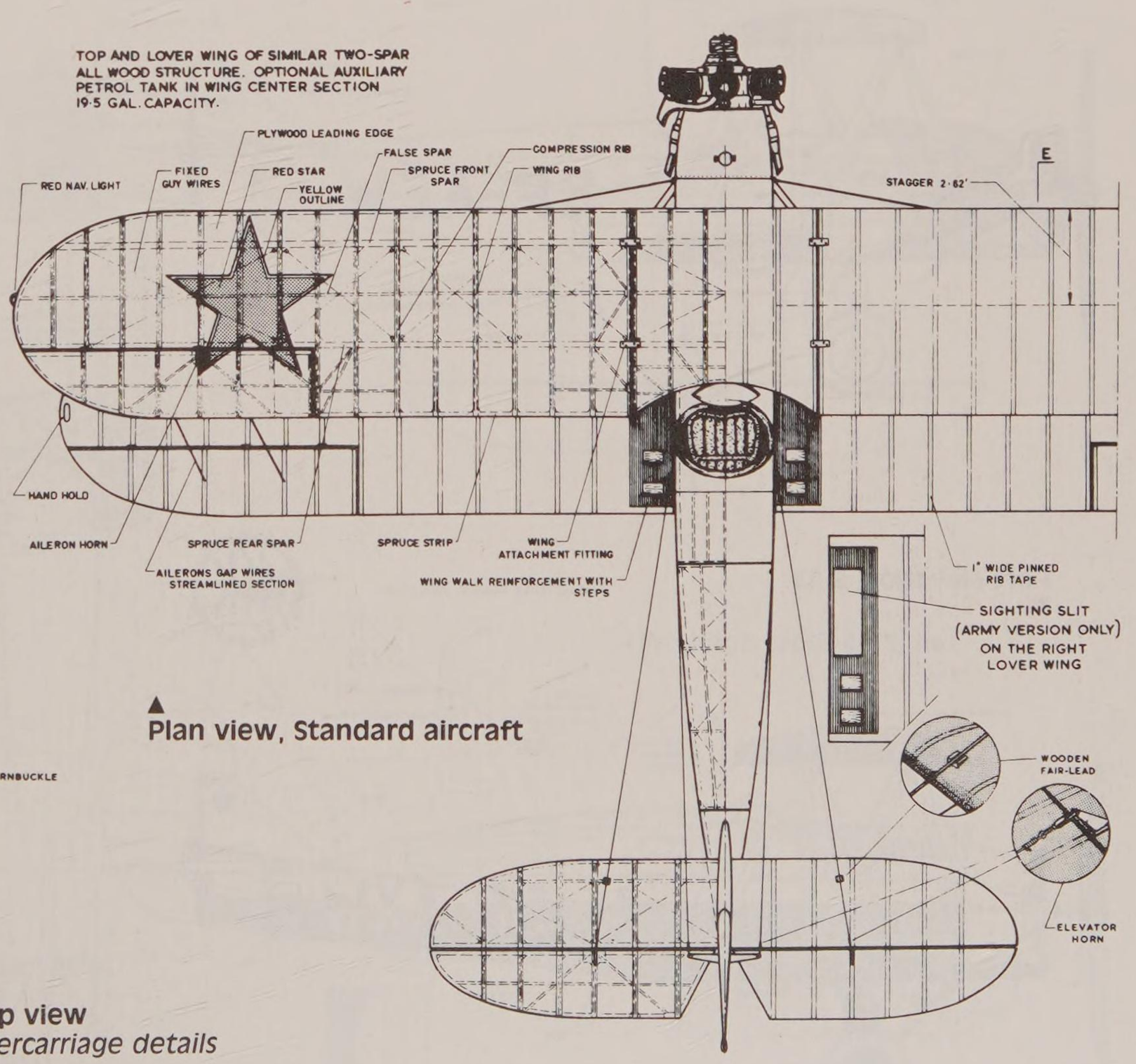


▲
Fuselage cross-sections

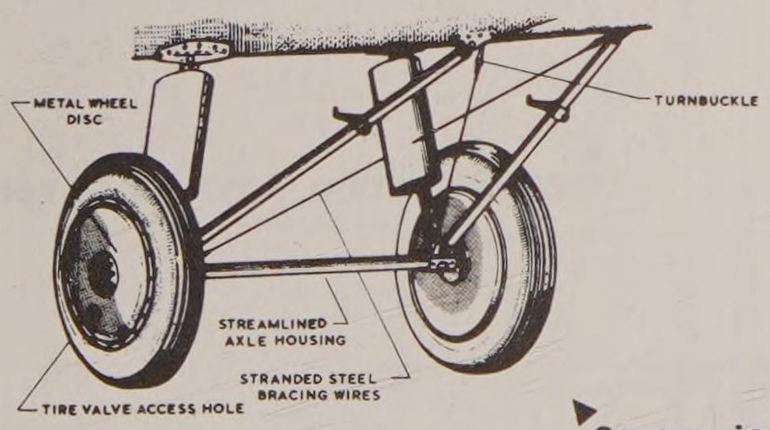


Wing cross-section ▲
Upper and lower wing

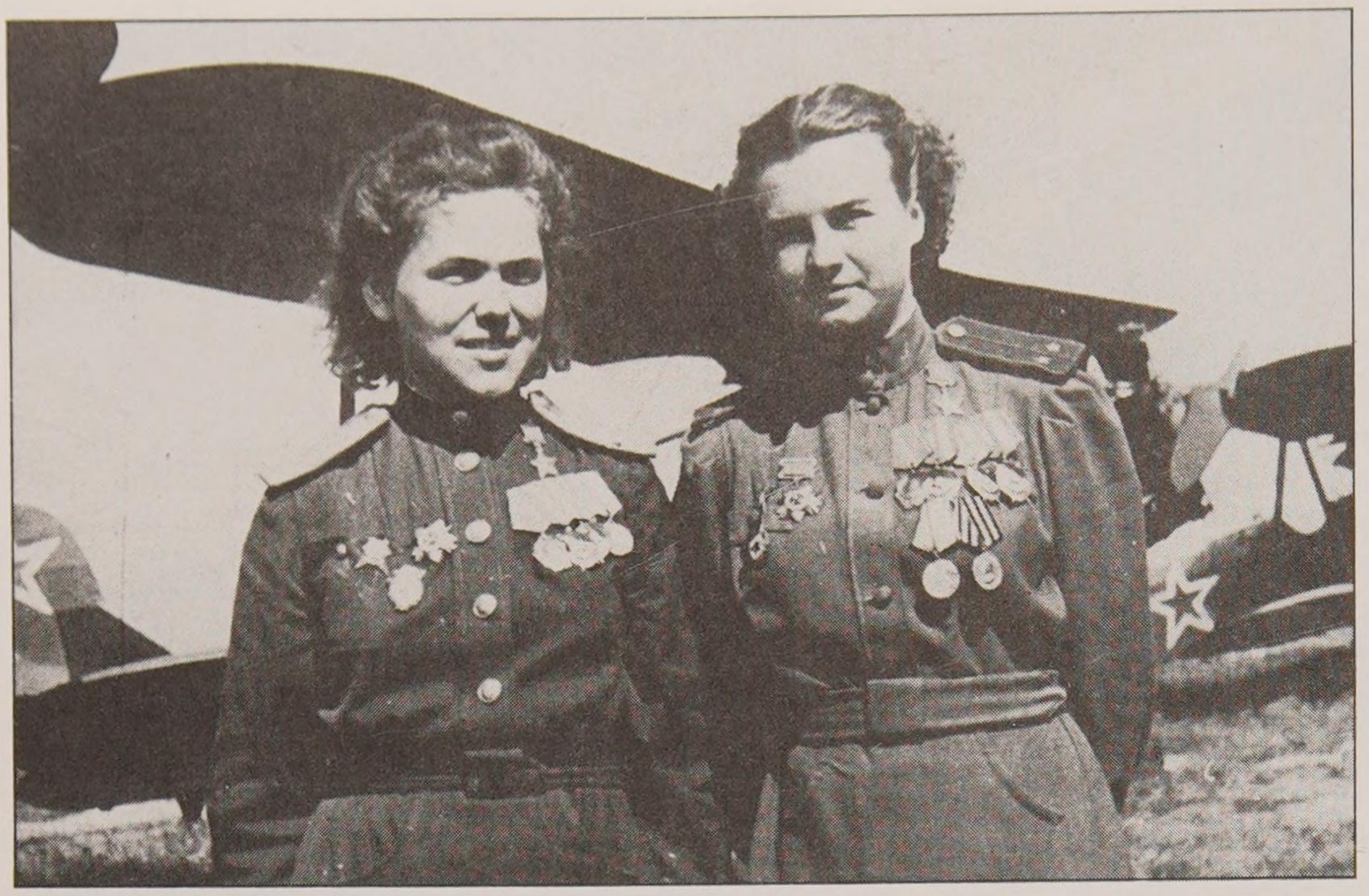




▲
Plan view, Standard aircraft



▶
Scrap view
Undercarriage details



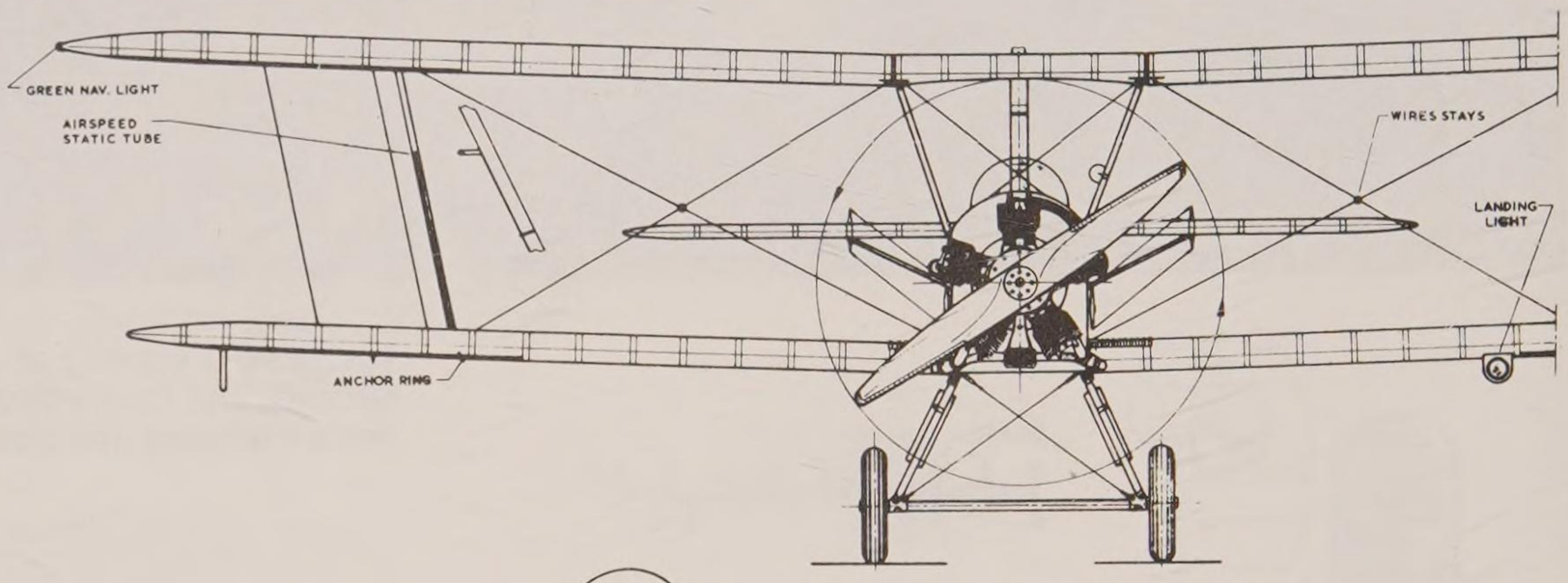
◄ Two members of the Soviet 46th 'Tamanskii' Guards Light Night Bomber Regiment, a unit whose personnel were exclusively female, pose in front of their Po-2s. (W Klepacki)

Ambulance version, showing method of transporting stretcher cases. Note external control wires running along fuselage. (M Passingham) ►

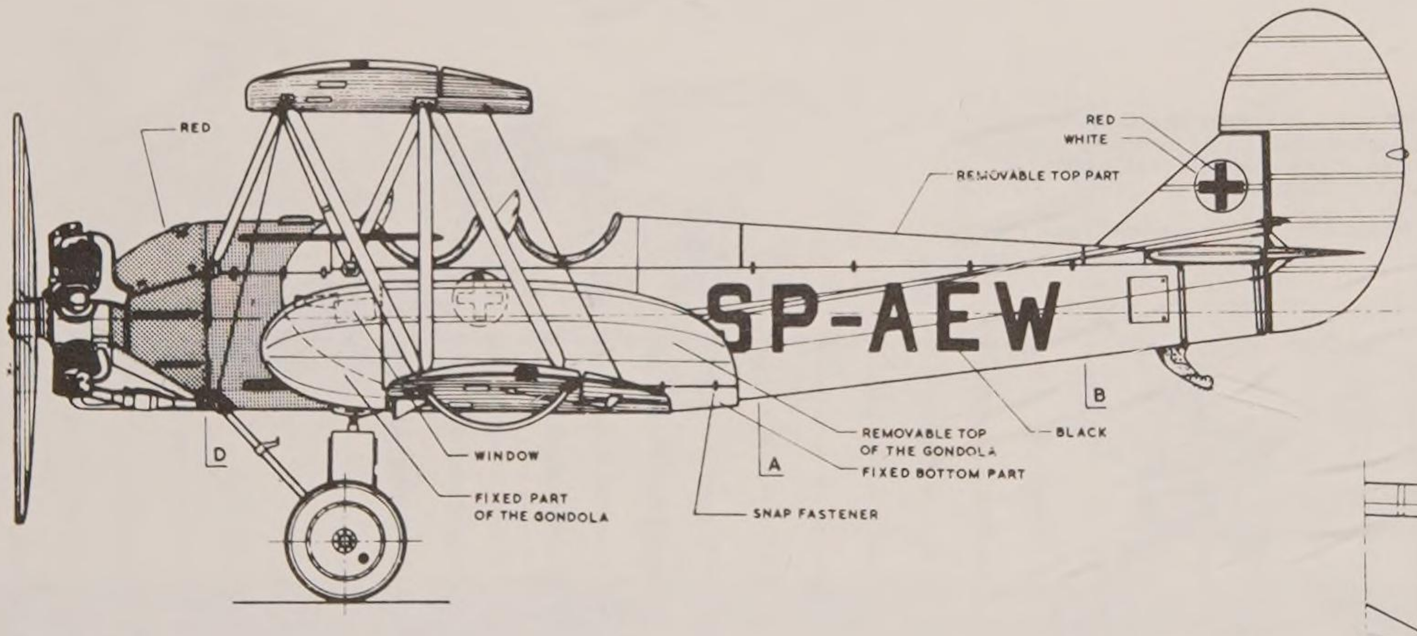
Scale

0 1 2 3 4 5 6 7 8 ft

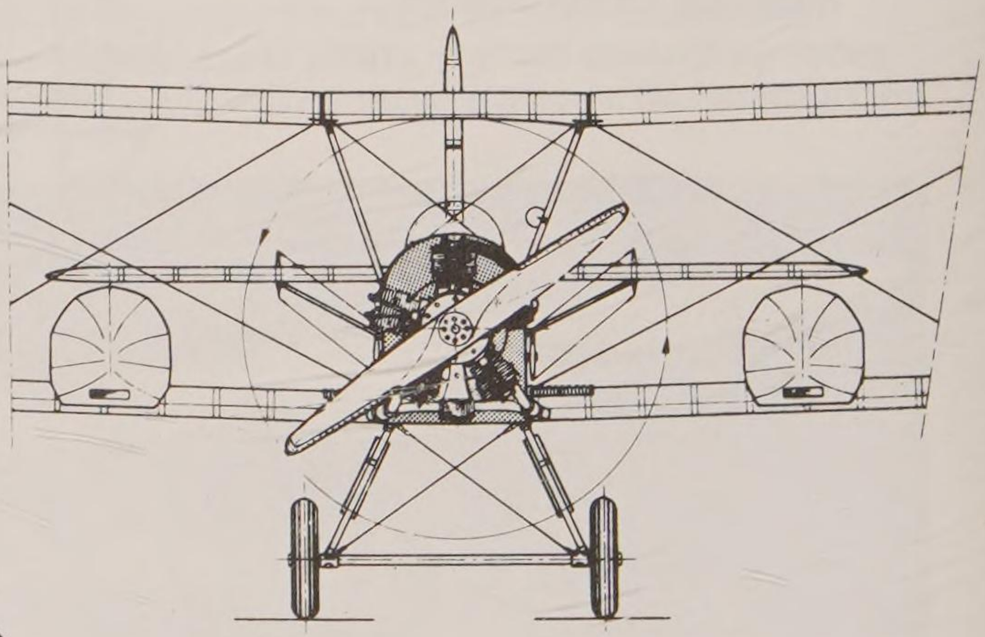
0 1 2 m



Port elevation, Ambulance version
▼

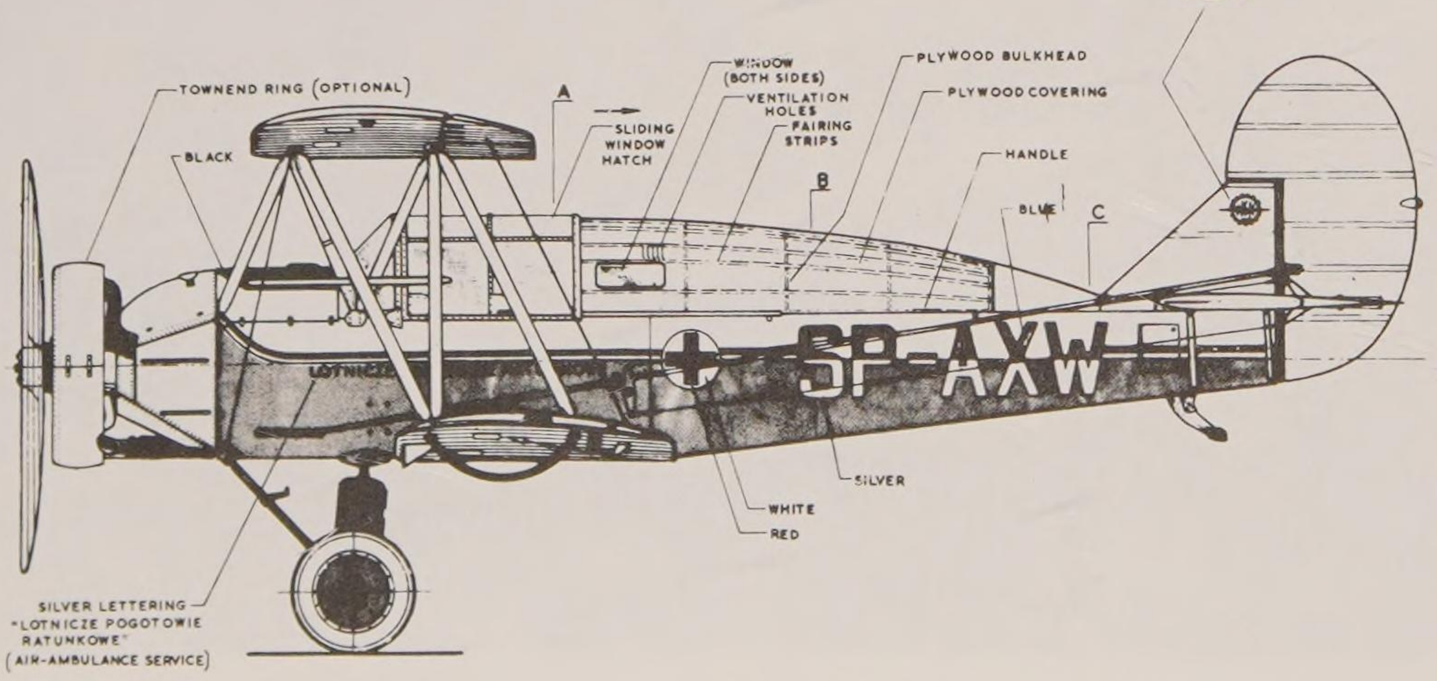


▲
Front elevation, Standard aircraft



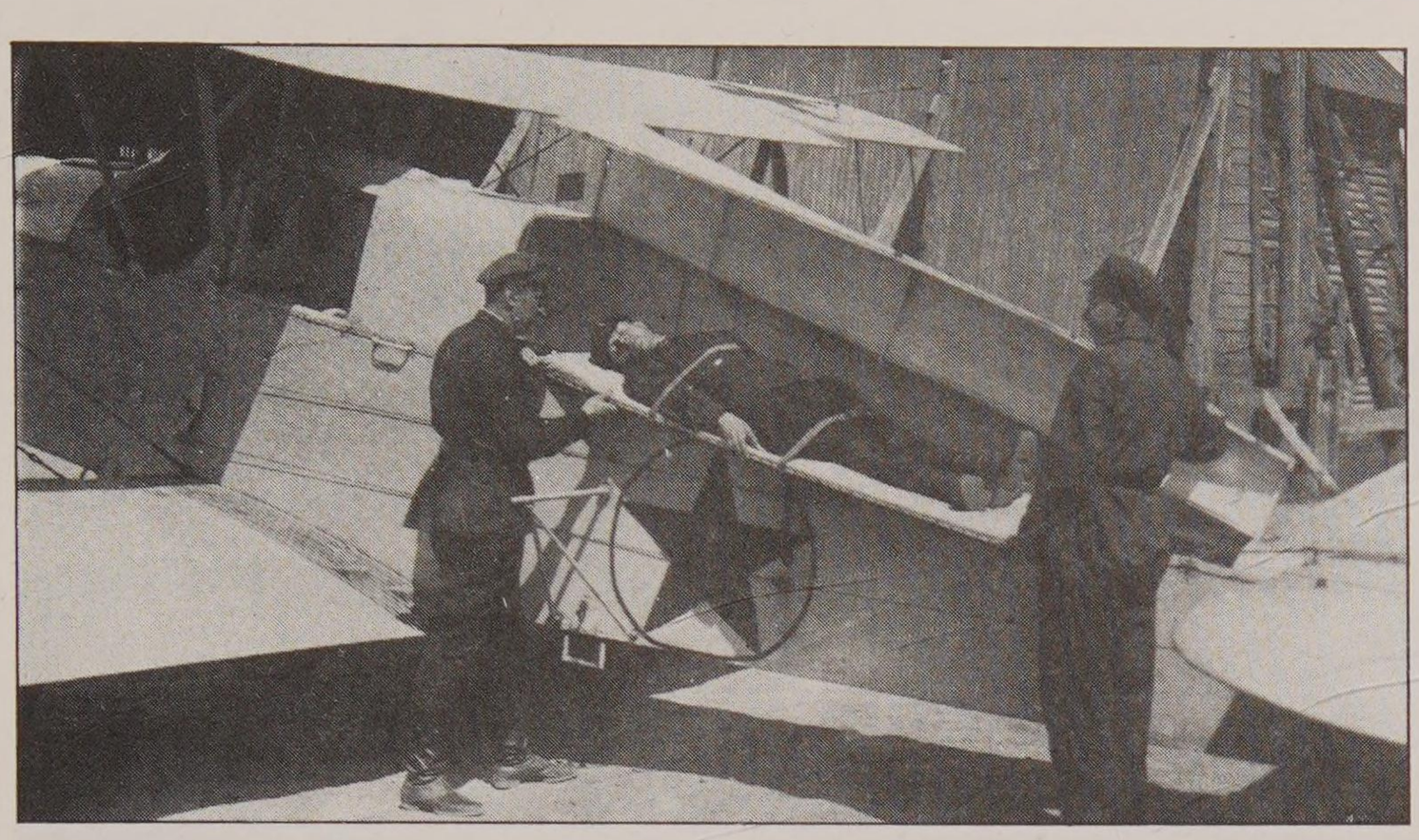
Port elevation, S-13
▼

FACTORY MARK /GREEN/



▲
Front elevation, Ambulance version

DRAWN BY F PAWLOWICZ



Colour notes

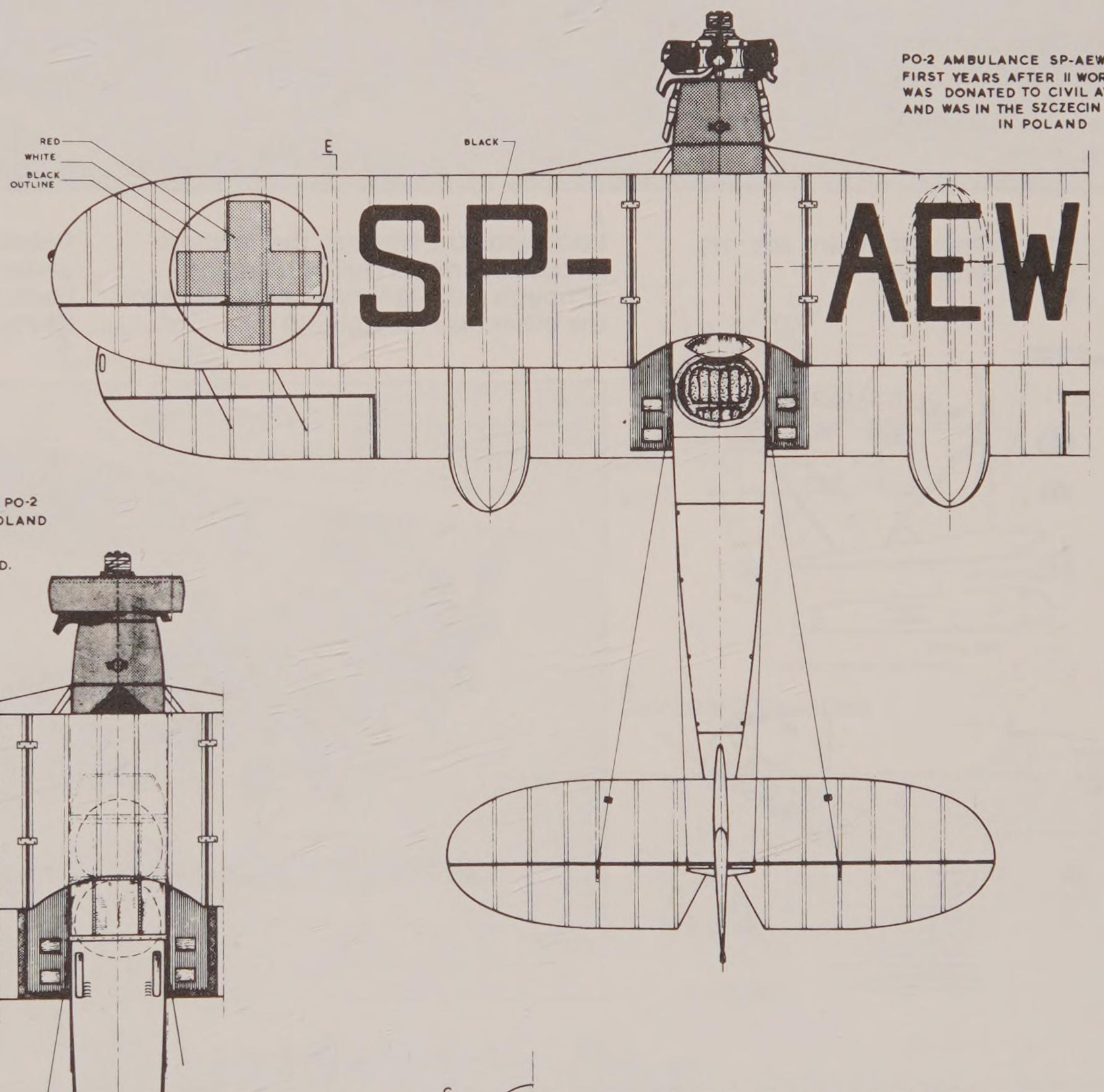
Ambulance version: Entire fuselage, wings, tail, undercarriage and gondolas – light cream.

S-13: All surfaces of wings and tail, all wing struts – silver. Front, lower sides and undersurfaces of fuselage, undercarriage – blue.

Standard aircraft: All surfaces of wings and tail, fuselage, all struts and undercarriage – olive green. Propeller – black or varnish.

Army version: Entire upper and side surfaces – olive green. Lower surfaces – light grey.

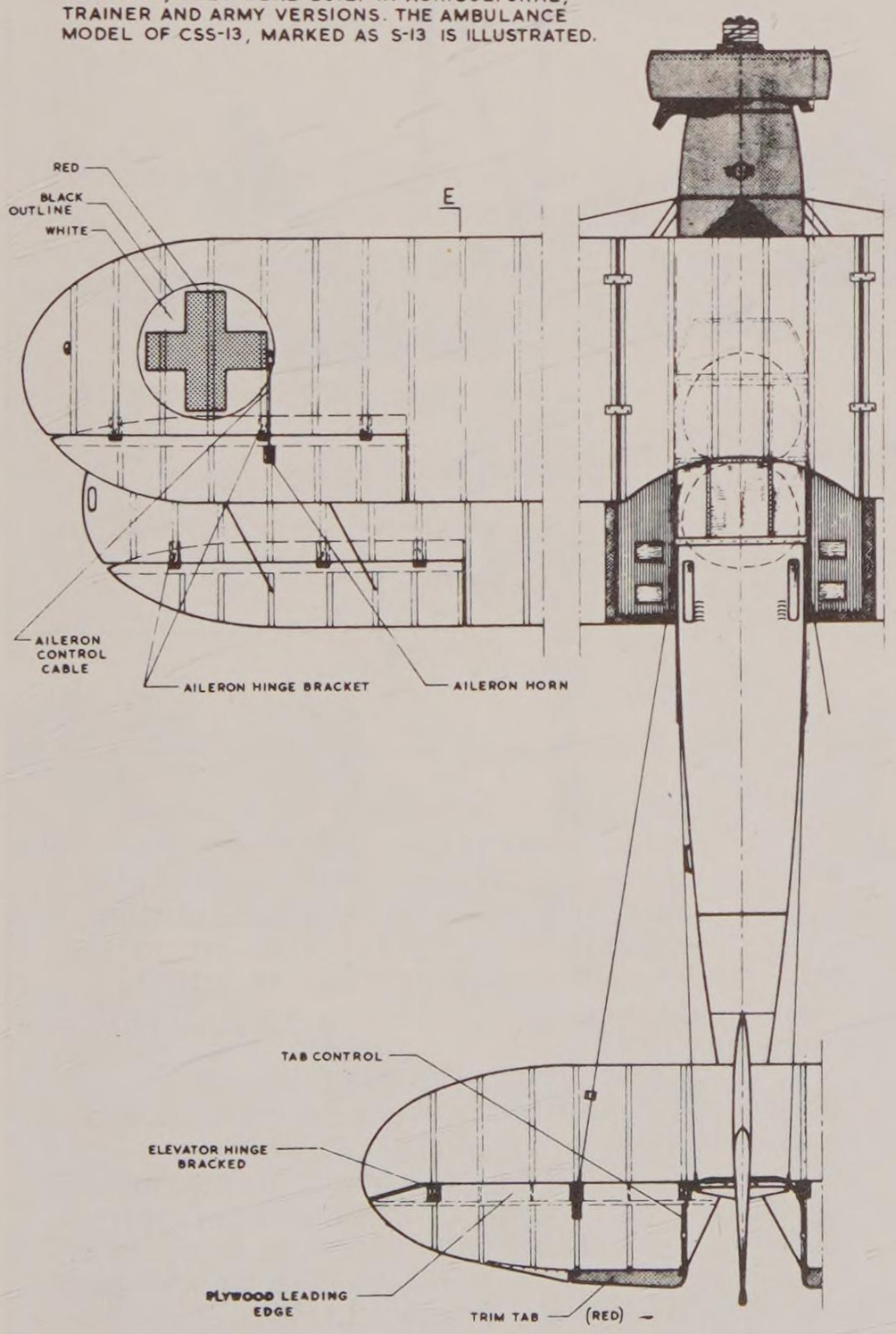
PO-2 AMBULANCE SP-AEW DURING FIRST YEARS AFTER II WORLD WAR WAS DONATED TO CIVIL AVIATION AND WAS IN THE SZCZECIN AEROCLUB IN POLAND

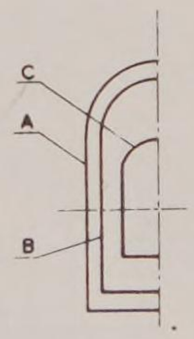


Plan view, Ambulance version ►

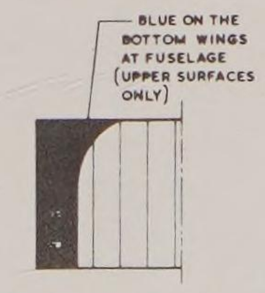
Plan view, S-13 ▼

S·13 MODIFIED VERSION OF AIRCRAFT PO-2 WAS BUILT UNDER LICENCE IN POLAND AS CSS-13, THEY WERE BUILT IN AGRICULTURAL, TRAINER AND ARMY VERSIONS. THE AMBULANCE MODEL OF CSS-13, MARKED AS S-13 IS ILLUSTRATED.





◄Fuselage cross-sections

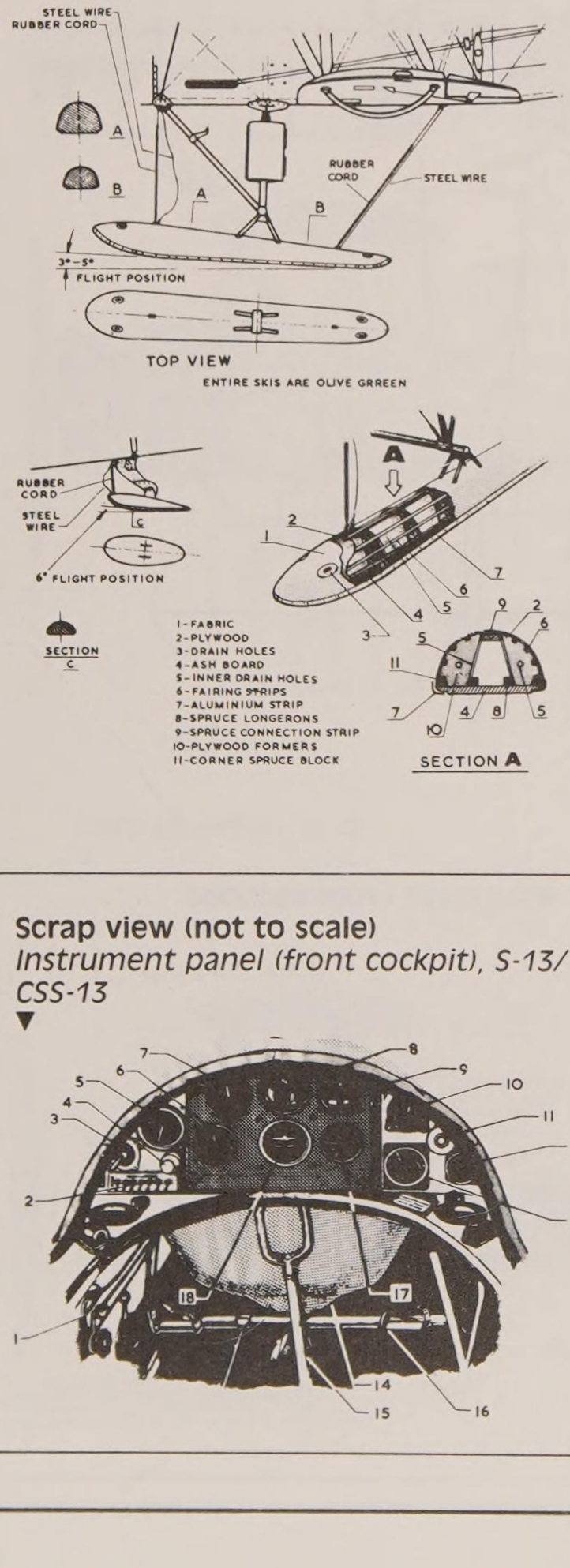


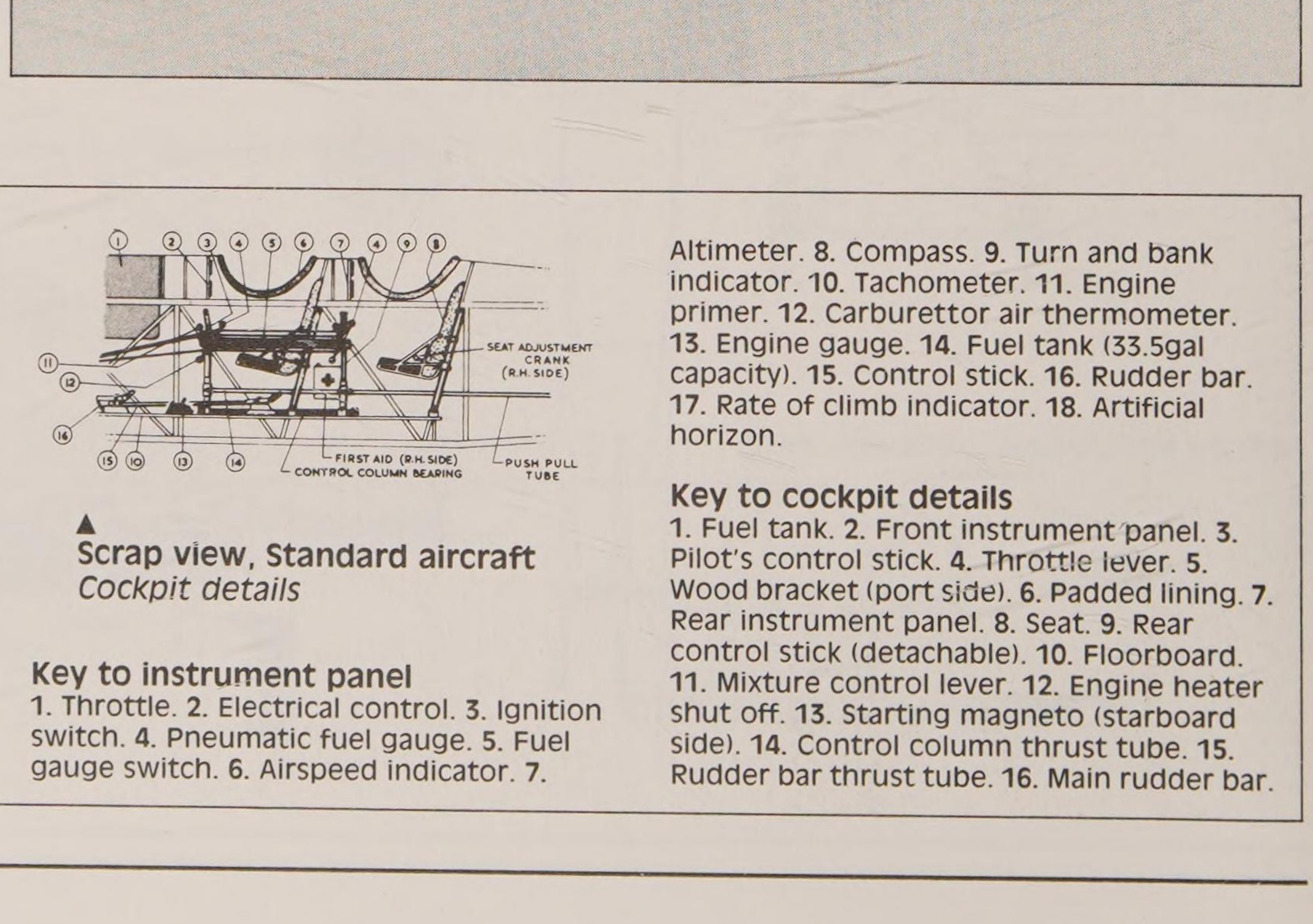
Scrap views, S-13 ▼

▲
Polikarpov U-2 trainers, the furthest aircraft bearing a civil registration although a similar-style tail number to the other. (M Passingham)

Polish-built CSS-13 equipped with ski undercarriage. Note also landing light beneath port wing, and wing-tip skids. (M Passingham)
▼

Scrap views, Standard aircraft
Ski undercarriage
▼





Scrap view (not to scale)
Instrument panel (front cockpit), S-13/ CSS-13
▼

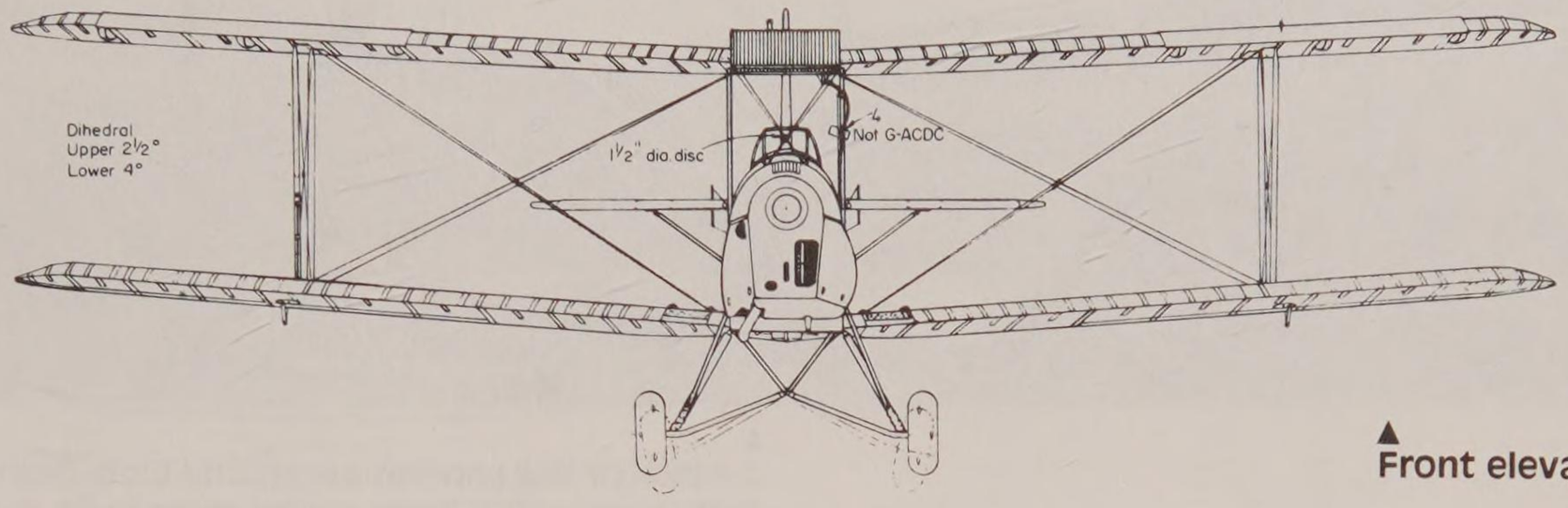
▲
Scrap view, Standard aircraft
Cockpit details

Key to instrument panel
1. Throttle. 2. Electrical control. 3. Ignition switch. 4. Pneumatic fuel gauge. 5. Fuel gauge switch. 6. Airspeed indicator. 7. Altimeter. 8. Compass. 9. Turn and bank indicator. 10. Tachometer. 11. Engine primer. 12. Carburettor air thermometer. 13. Engine gauge. 14. Fuel tank (33.5gal capacity). 15. Control stick. 16. Rudder bar. 17. Rate of climb indicator. 18. Artificial horizon.

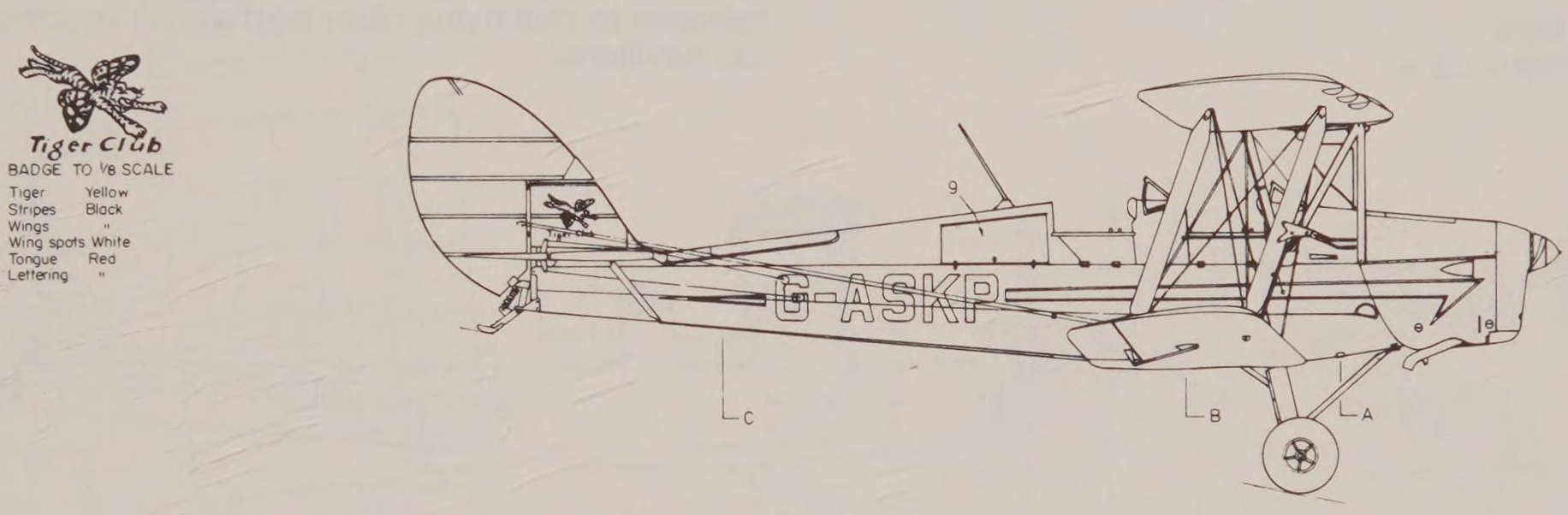
Key to cockpit details
1. Fuel tank. 2. Front instrument panel. 3. Pilot's control stick. 4. Throttle lever. 5. Wood bracket (port side). 6. Padded lining. 7. Rear instrument panel. 8. Seat. 9. Rear control stick (detachable). 10. Floorboard. 11. Mixture control lever. 12. Engine heater shut off. 13. Starting magneto (starboard side). 14. Control column thrust tube. 15. Rudder bar thrust tube. 16. Main rudder bar.

De Havilland DH82A Tiger Moth

Country of origin: Great Britain.
Type: Two-seat, land-based primary trainer.
Dimensions: Wing span 29ft 4in *8.94m*; length 23ft 11in *7.29m*; height 8ft 9½in *2.68m*; wing area 239 sq ft *22.2m²*.
Weights: Empty 1115lb *506kg*; maximum 1825lb *828kg*.
Powerplant: One De Havilland Gipsy Major four-cylinder, inverted, air-cooled engine rated at 130hp.
Performance: Maximum speed 109mph *175kph* at sea level; initial climb rate 673ft/min *196m/min*; service ceiling 13,600ft *4150m*.
Armament: None.
Service: First flight (DH60T) September 1931, (prototype Tiger Moth) 26 October 1931; service entry November 1931.



▲ Front elevation



▲ Starboard elevation

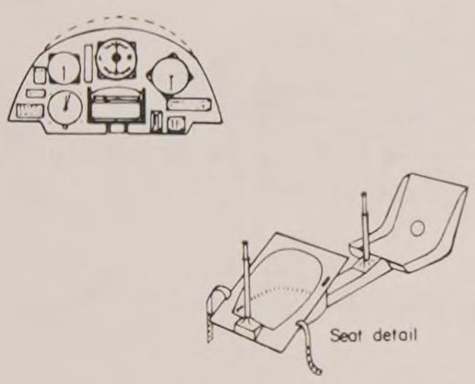
Tiger Club
BADGE TO ⅛ SCALE

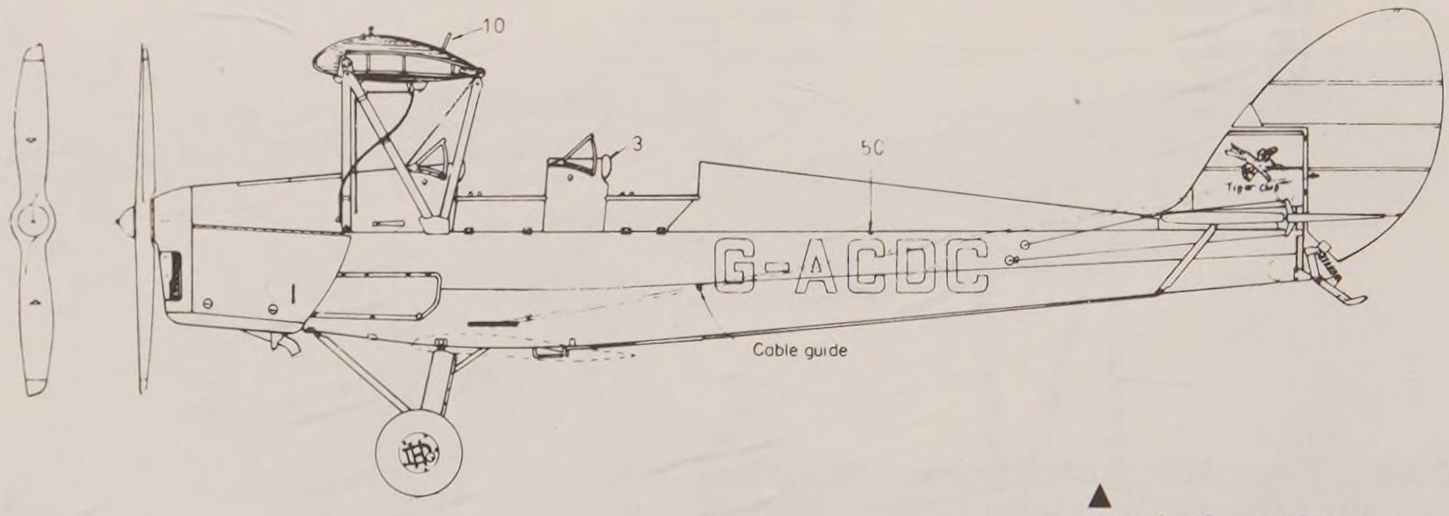
Tiger	Yellow
Stripes	Black
Wings	"
Wing spots	White
Tongue	Red
Lettering	"

A Royal Navy Tiger Moth, photographed in 1947 at Eaton Bray. This aircraft was formerly G-ABRC, impressed into military service *circa* 1940.
▼

▲
G-ADUK of the London Aeroplane Club, being flown solo, 1948. Nearly 9000 Tiger Moths were built, many being released to civil flying clubs postwar at knock-down prices. (De Havilland)

Scrap view
Instrument panel
▼





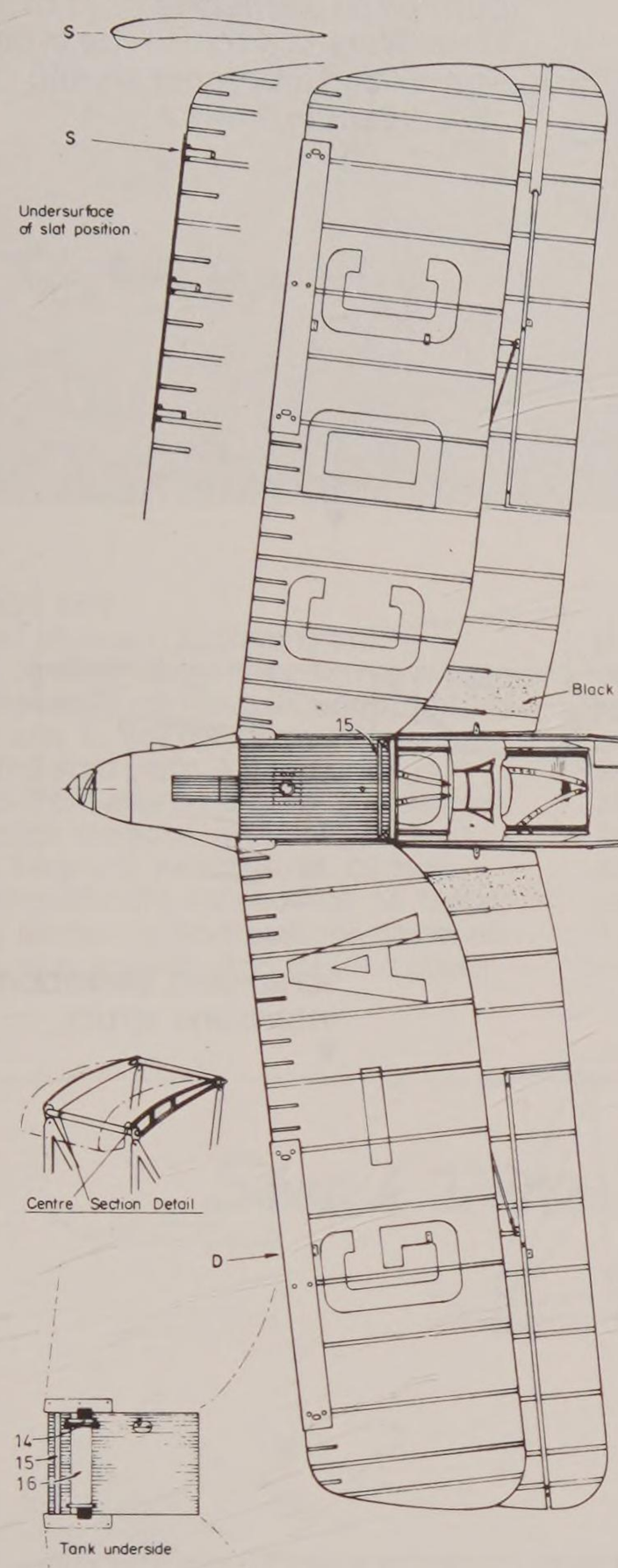
▲
Port elevation

Tiger Moth II R5130 in wartime colours of Dark Earth and Dark Green camouflage, with yellow undersurfaces.
▼

Scale

0 1 2 3 4 5 6 7 8 ft

0 1 2 m



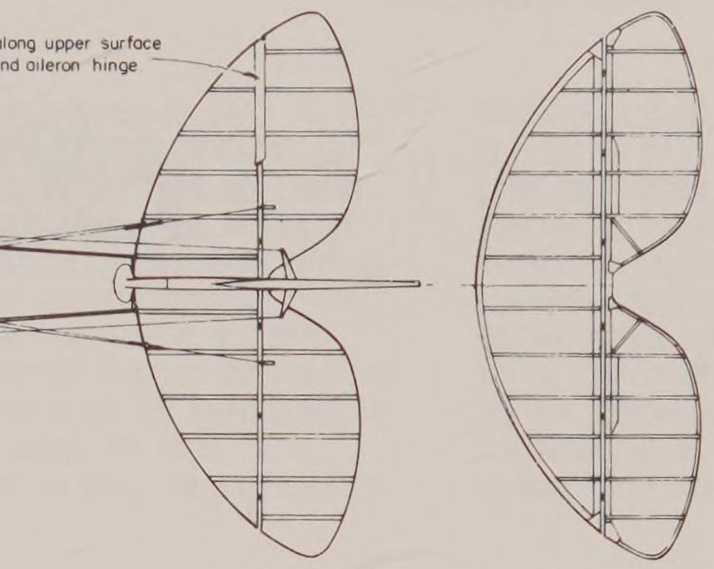
Plan view ▼

Colour notes

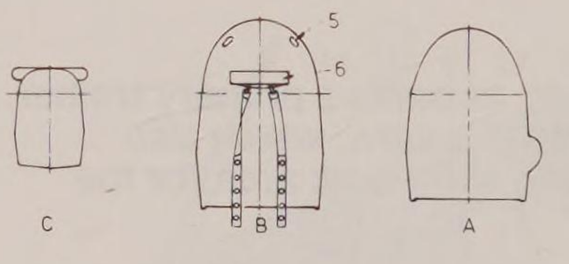
G-ACDC: Fuselage, all struts, wing lettering – deep red. All flying surfaces and fuel tank – silver. Fuselage lettering – white. Wheel discs – silver.

G-ASKP: Overall finish – chrome yellow. Interplane struts, fuselage stripes, all lettering – mid-blue. Fuselage undersurfaces and undercarriage legs – black. Border of fuselage stripes – white.

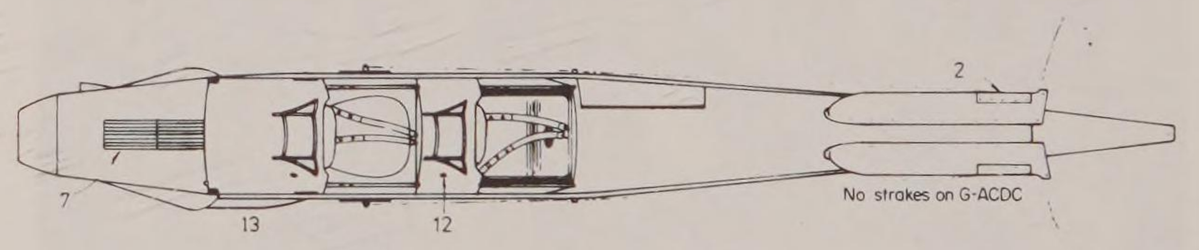
General: Cockpit interior – dull green. Airscrew – grey. Airscrew tips – yellow.



◀ **Scrap underplan**
Tailplane

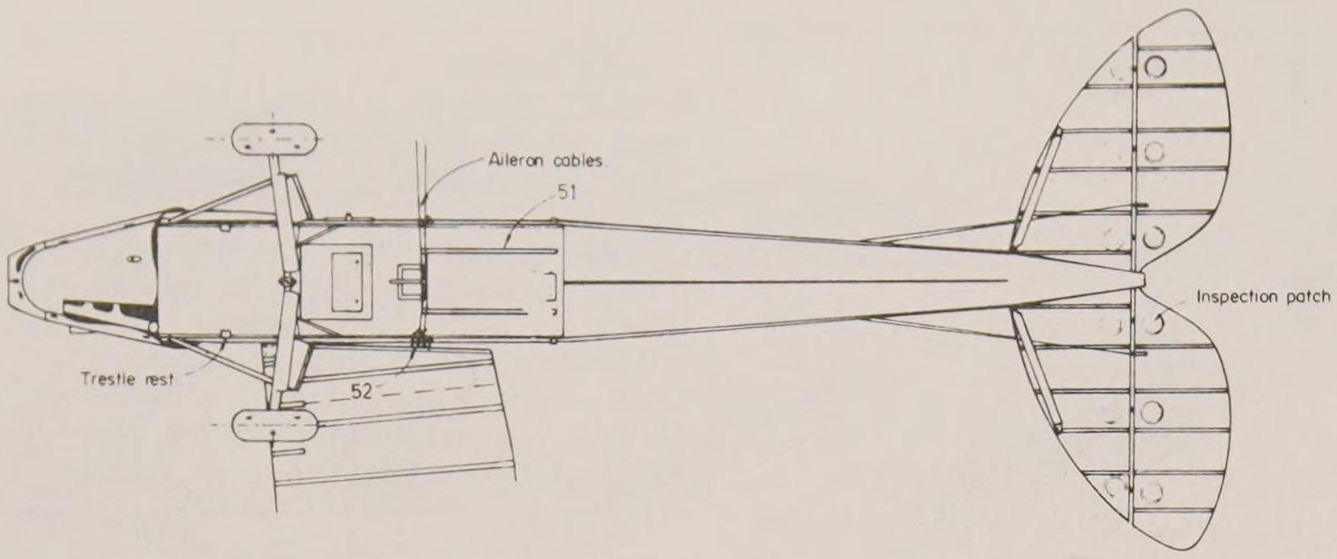


◀ **Fuselage cross-sections**

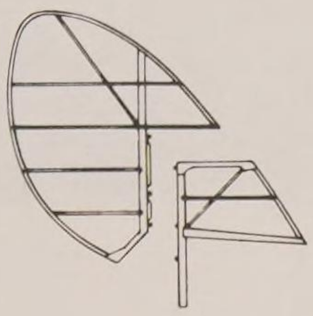


▲
Scrap plan view
Fuselage, with wing omitted

One of the 3000 or so Tiger Moths built by Morris Motors during the war. Note the first aid access panel just aft of the roundel.
▼



▲
Scrap underplan

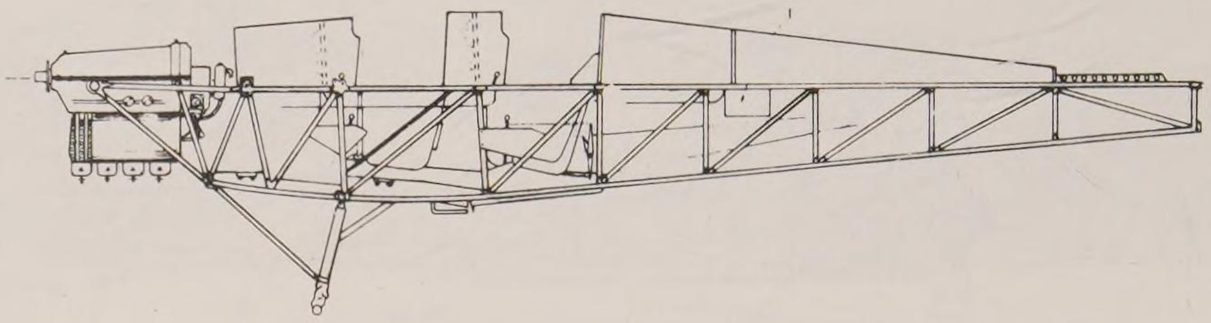


Scrap views ▲
Fin and rudder construction

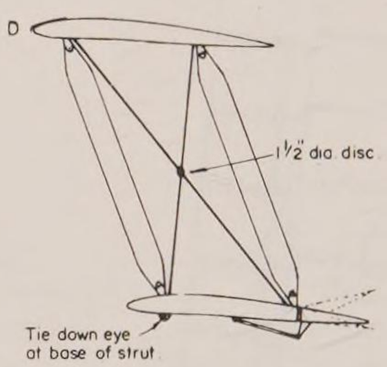
A flight of Tiger Moths, two in military markings, photographed prewar. During the desperate days of 1940, plans were laid to use the type as a fighter and a bomber should the need arise. (De Havilland) ►

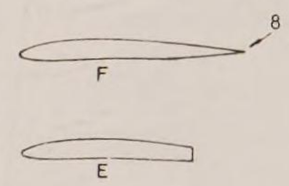
Scale
0 1 2 3 4 5 6 7 8 ft
0 1 2 m

Scrap view
Structure
▼

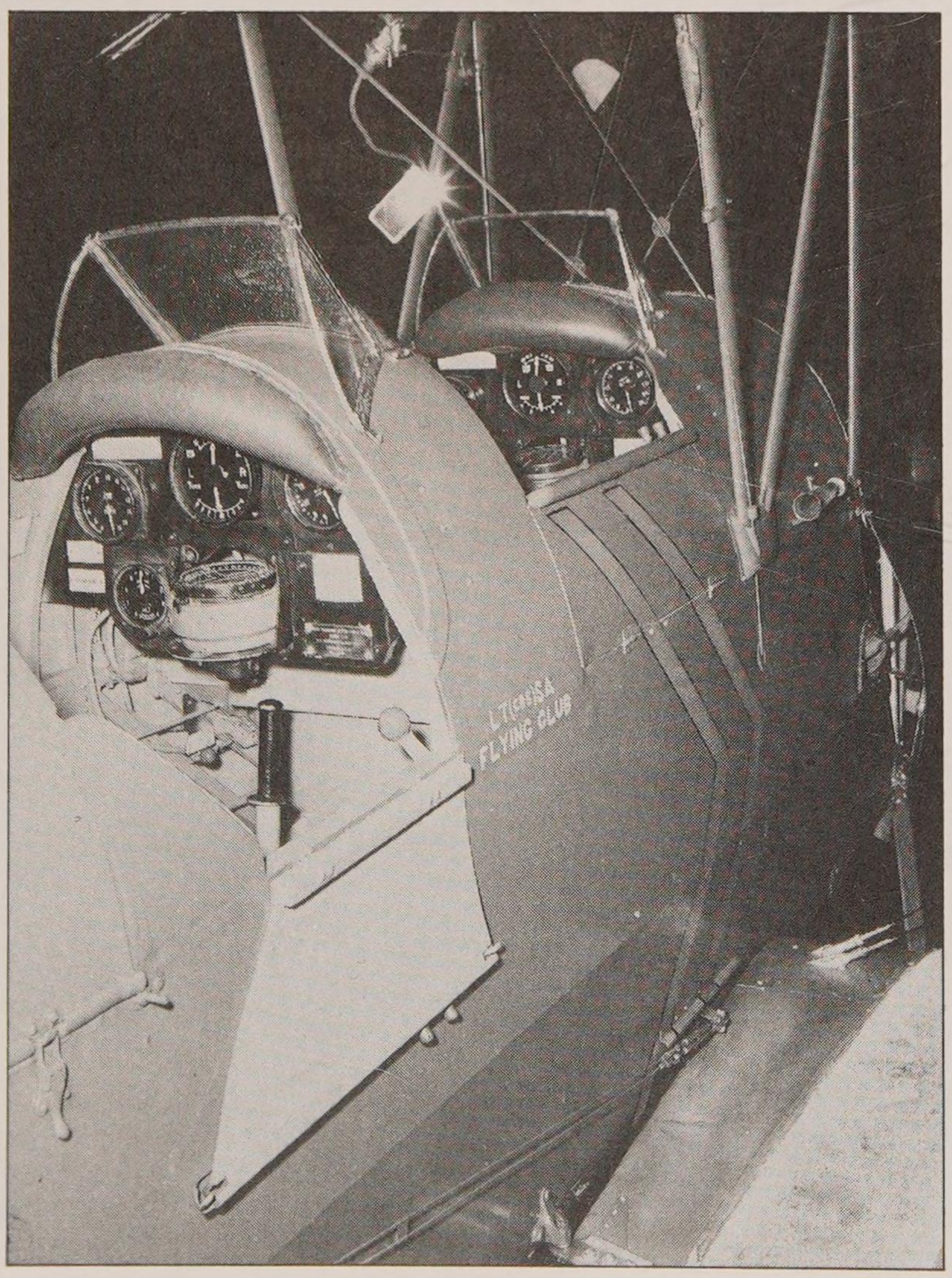


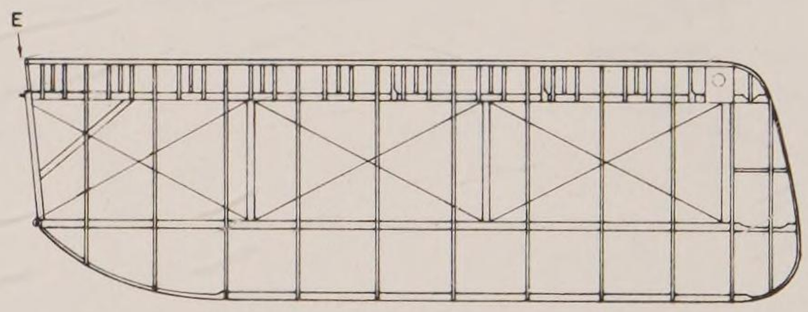
Scrap port elevation
Interplane struts
▼





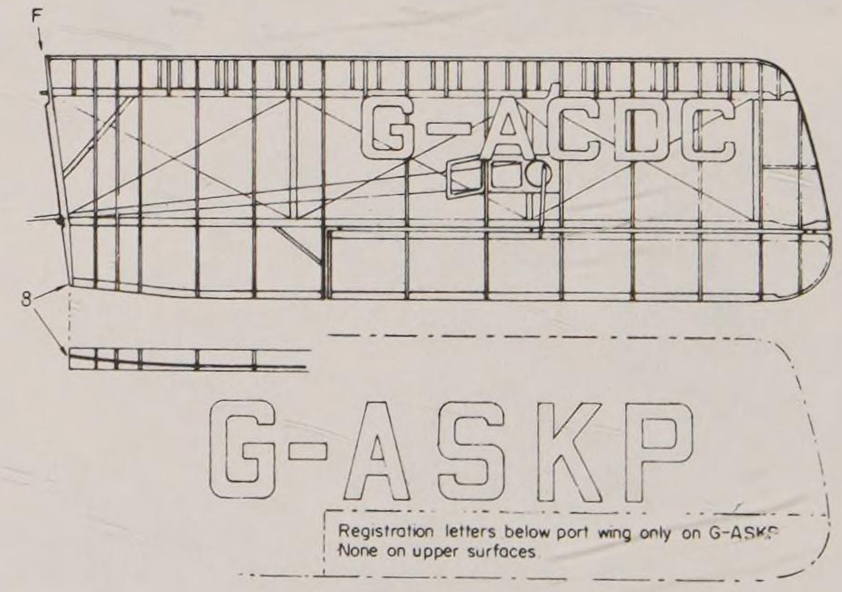
Cockpit instrumentation is basic, as befits a primary trainer. The crash pads are prominent in this view, which also shows to advantage the non-slip wing walk area for the crew.
▼





▲
Scrap underplan
Upper port wing

Scrap underplan
Lower port wing
▼

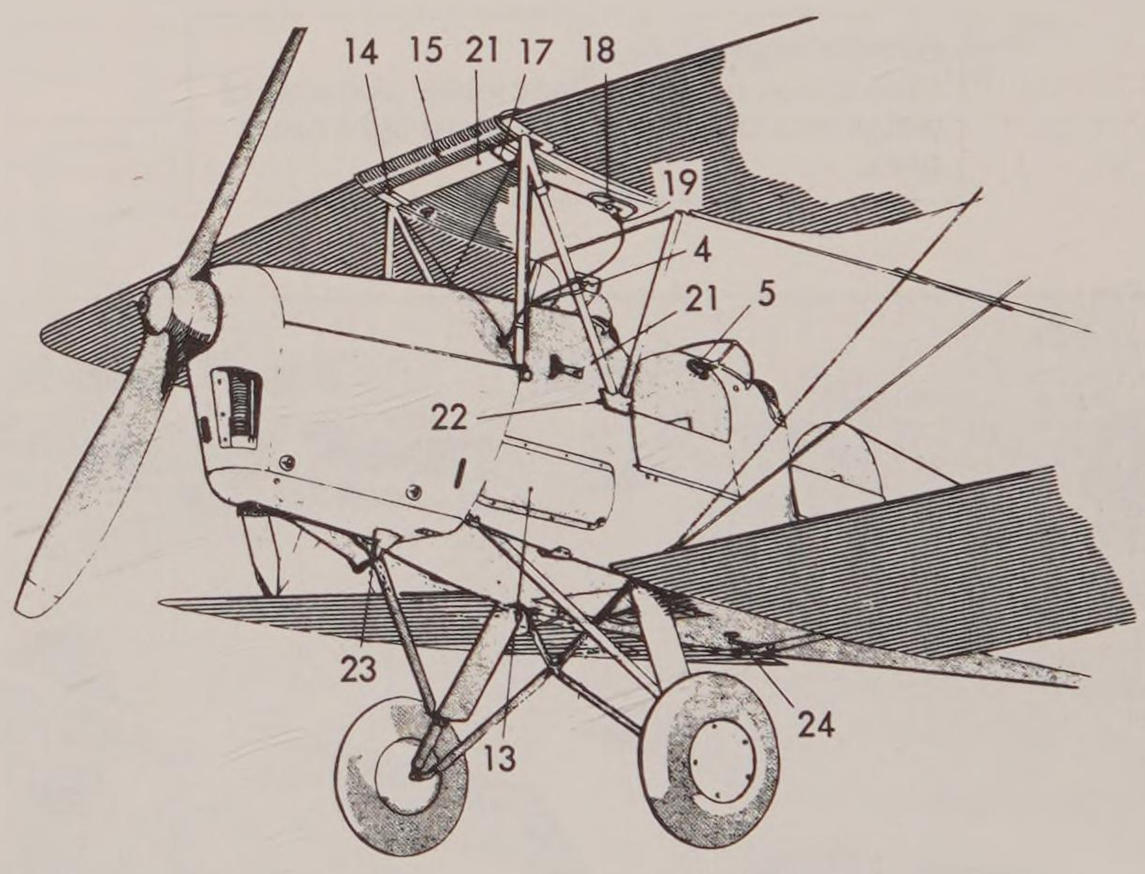


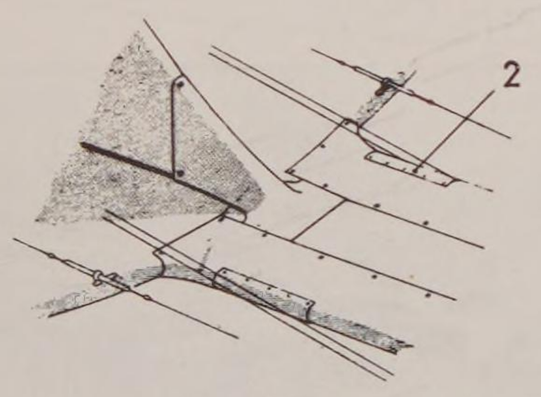
DRAWN BY D BRYANT

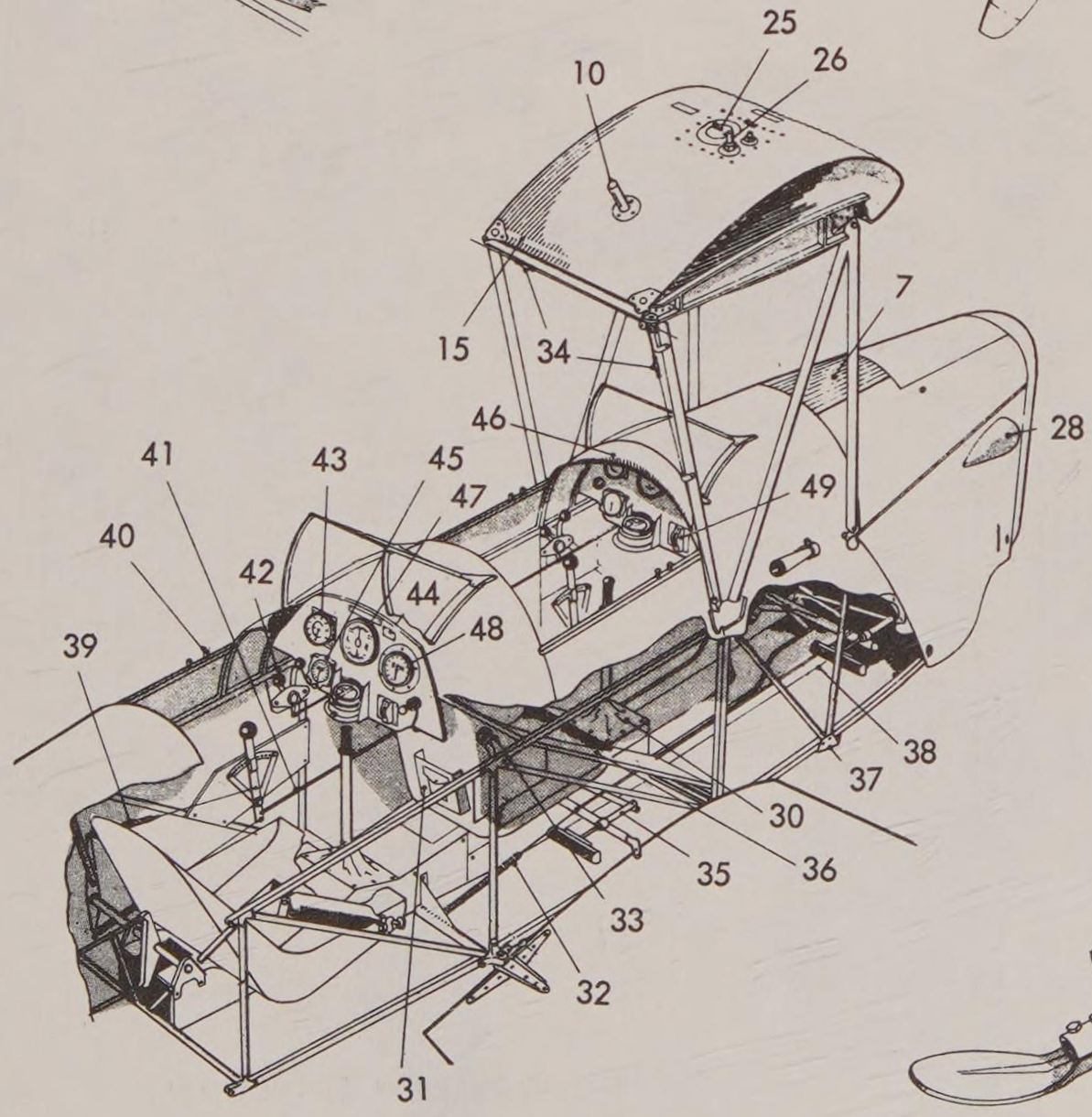
Numerical key

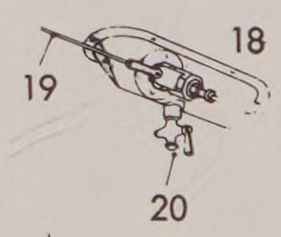
1. First aid stowage. 2. Chafing plates on anti-spin strakes. 3. Leather-covered crash pad. 4. Rear-view mirror. 5. Handgrips (front cockpit only). 6. Slot for safety harness. 7. Corrugated step plate. 8. Trailing edge slopes up from aileron to root. 9. Intercom and baggage stowage. 10. Fuel gauge. 11. Slots. 12. Magneto switches. 13. Oil tank (mounted externally for cooling). 14. Metal retaining plates. 15. Corrugations flattened locally to give smooth strip. 16. Flat cover plate over spar channel in tank. 17. Connector pipe across bridge of tank. 18. Fuel sump. 19. Fuel shut-off rod. 20. Drain cock. 21. Venturi (both sides). 22. Pressed aluminium fairing. 23. Overflow pipe fairing. 24. Steadying arm for aileron return cable. 25. Filler cap. 26. Overflow valve. 27. Skid detail. 28. Carburettor air intake. 29. Aileron cam detail. 30. Leather cuff. 31. Map pocket. 32. Spring bias on rudder. 33. Slot locking lever. 34. Slot locking handgrips. 35. Parallel-action rudder pedals. 36. Front seat mounted in diagonal bulkhead. 37. Jacking pad. 38. Rudder linking rod. 39. Spring bias for tail trimming. 40. Door catches. 41. Tail trim connecting rod. 42. Throttle. 43. Air speed indicator. 44. Deviation card holder. 45. Altimeter. 46. Crash pad. 47. Turn and bank indicator. 48. Engine speed indicator. 49. Oil pressure indicator (red). 50. Pull tab for first aid access. 51. ¾in × ½in wood strips. 52. Pitot tubes.

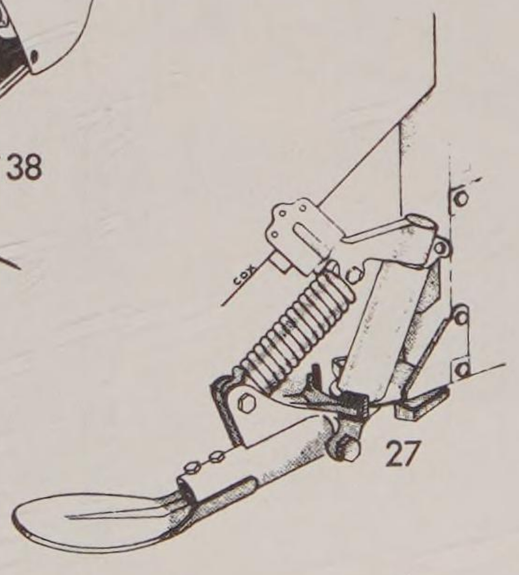
Sketch section

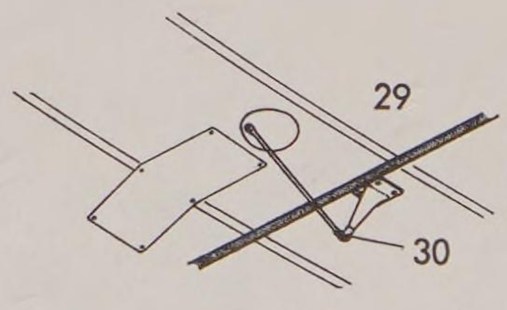






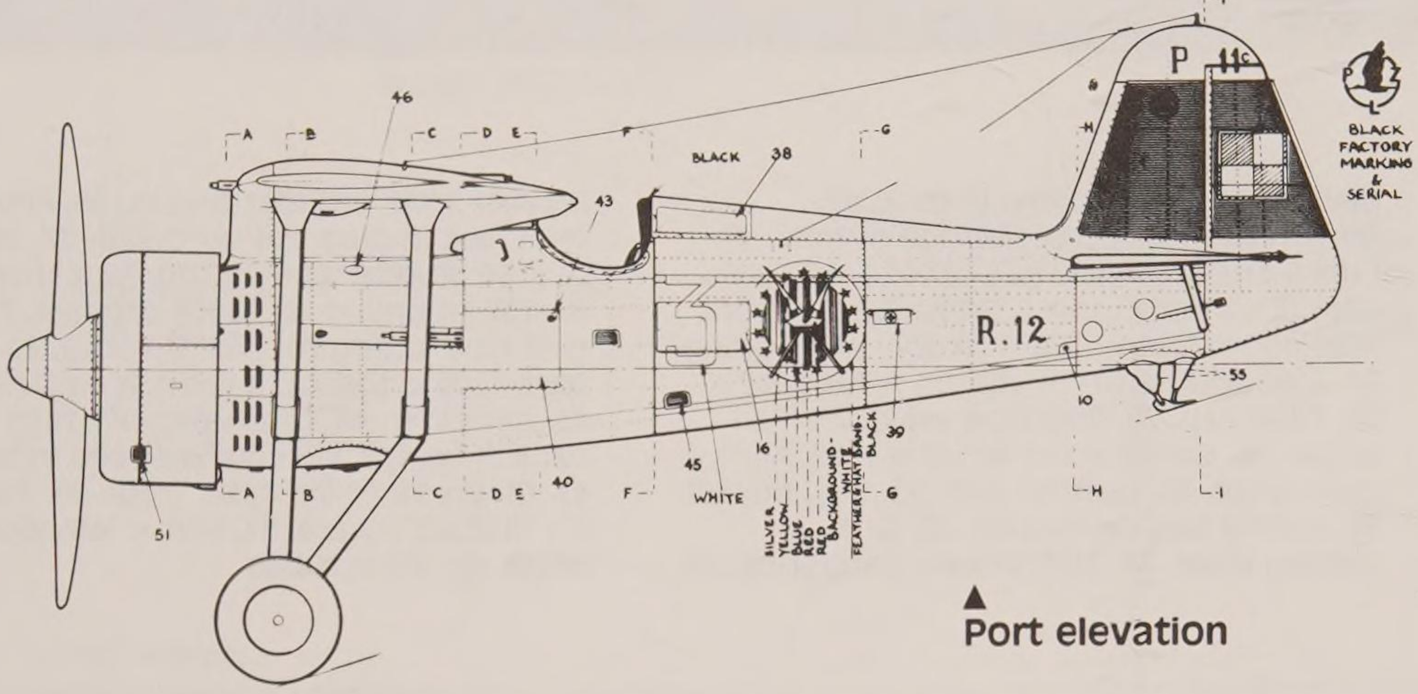




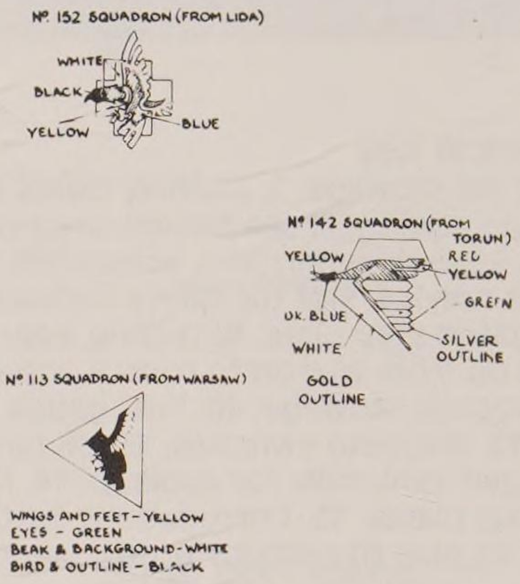


PZL P11c

Country of origin: Poland.
Type: Single-seat, land-based interceptor fighter and fighter-bomber.
Dimensions: Wing span 35ft 2in *10.79m*; length 24ft 9½in *7.56m*; height 9ft 4in *2.84m*; wing area 192.7 sq ft *17.9m²*.
Weights: Empty 2443lb *1108kg*; loaded 3505lb *1590kg*.
Powerplant: One Bristol Mercury VI S2 nine-cylinder radial engine rated at 645hp.
Performance: Maximum speed 242mph *390kph* at 18,050ft *5500m*; time to 16,400ft *5000m*, 6min; service ceiling 36,100ft *11,000m*; range 503 miles *810km*.
Armament: Two or four fixed 7.7mm KM Wz33 machine guns, plus two 27lb *12.25kg* bombs.
Service: First flight (P11/I prototype) October 1931; service entry (P11a) 1934, (P11c) late 1934.



▲ Port elevation

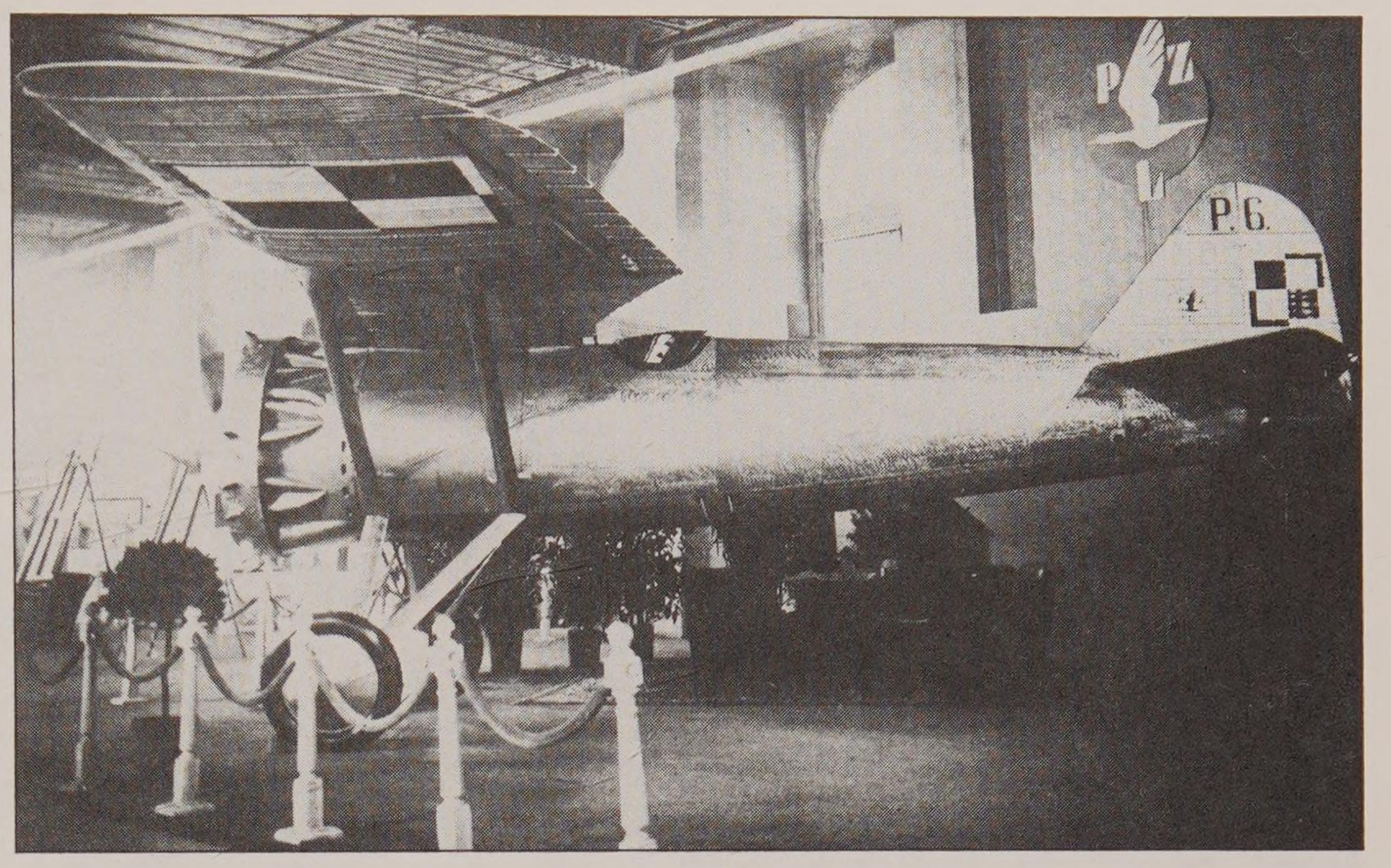


Colour notes
Olive green overall except lower surfaces of wings and tailplane which were light blue-grey.

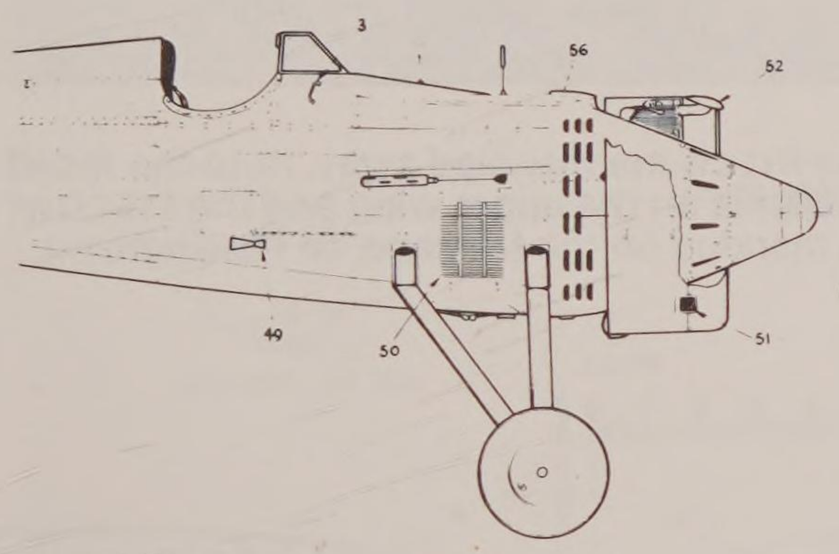
No 113 Squadron Polish Air Force P11cs at Okecie Airport, Warsaw; the fourth machine in line is in fact a P6, as noted on the fin tip. Emergency production of the P11 was halted by the German invasion, and only some 250 were built. (M Passingham)

▼

Numerical key
1. Mirror. 2. Fuel tank. 3. Hand grip. 4. Compass. 5. Boost. 6. Fuel pressure. 7. Emergency fuel cut-off. 8. Oil temperature (out). 9. Brake drum and cable. 10. Jacking point. 11. Fuel gauge. 12. Oil temperature (in). 13. Oil pressure. 14. Air speed indicator/ artificial horizon. 15. Compass deviation table. 16. Bank indicator. 17. Engine rpm. 18. Altimeter. 19. Rate of fuel flow control. 20. Clock. 21. Bomb release control. 22. Harness tension control. 23. Boost control. 24. Throttle. 25. Radio. 26. Fuselage guns trigger button. 27. Wing guns trigger button. 28. Oil tank. 29. Fuel header tank. 30. Rudder pedals. 31. Brake control. 32. Ammunition box. 33. Dual-purpose ailerons/flaps. 34. Signal cartridges rack. 35. Gun mountings. 36. Elevator trim. 37. Very pistol. 38. Pilot's locker. 39. First aid. 40. Gun servicing hatch. 41. Air intake control. 42. Seat adjustment. 43. Opening for Very pistol. 44. Elevator trim gear. 45. Foot rests. 46. Fuel inlet. 47. Bomb rack (12.5kg). 48. Air speed indicator pitot. 49. Venturi. 50. Oil cooler. 51. Exhaust. 52. Exhaust collector. 53. Corrugated duralumin (8 corrugations per inch). 54. Rubber covering (to prevent shell damage by cases and links). 55. Tan leather. 56. Detachable panel over oil tank. 57. KM Wz33 guns. 58. Camera.

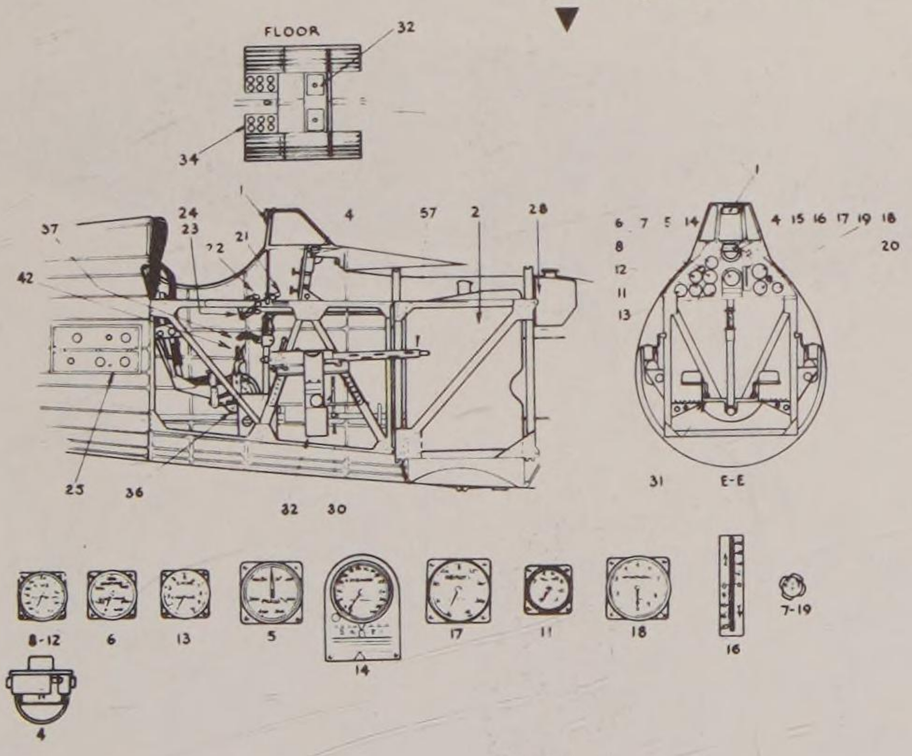


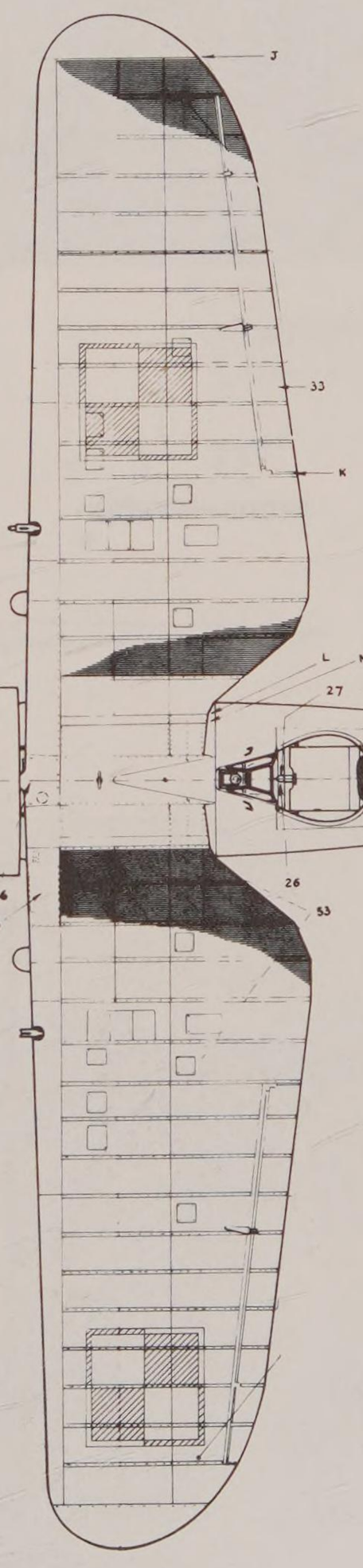
▲
The PZL P6 prototype. This and the P7 were the direct progenitors of the P11, the inline-engined P8/9/10 series being discarded in favour of the radial-engined 7 and 11. (M Passingham)



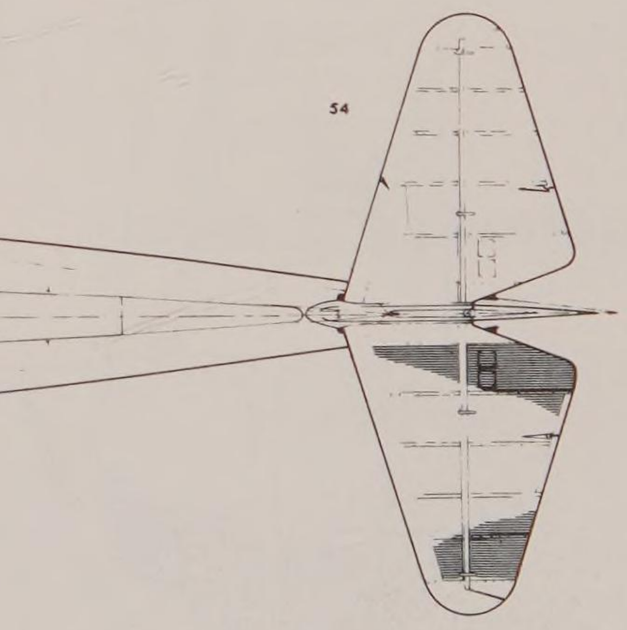
▲
Scrap starboard elevation

Scrap views
Cockpit details
▼

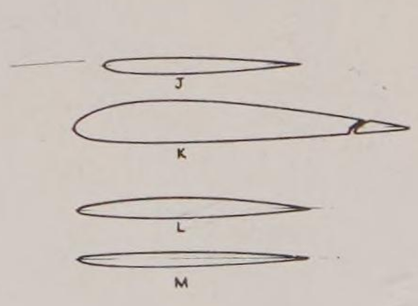




Scale
0 1 2 3 4 5 6 7 8 ft
0 1 2 m



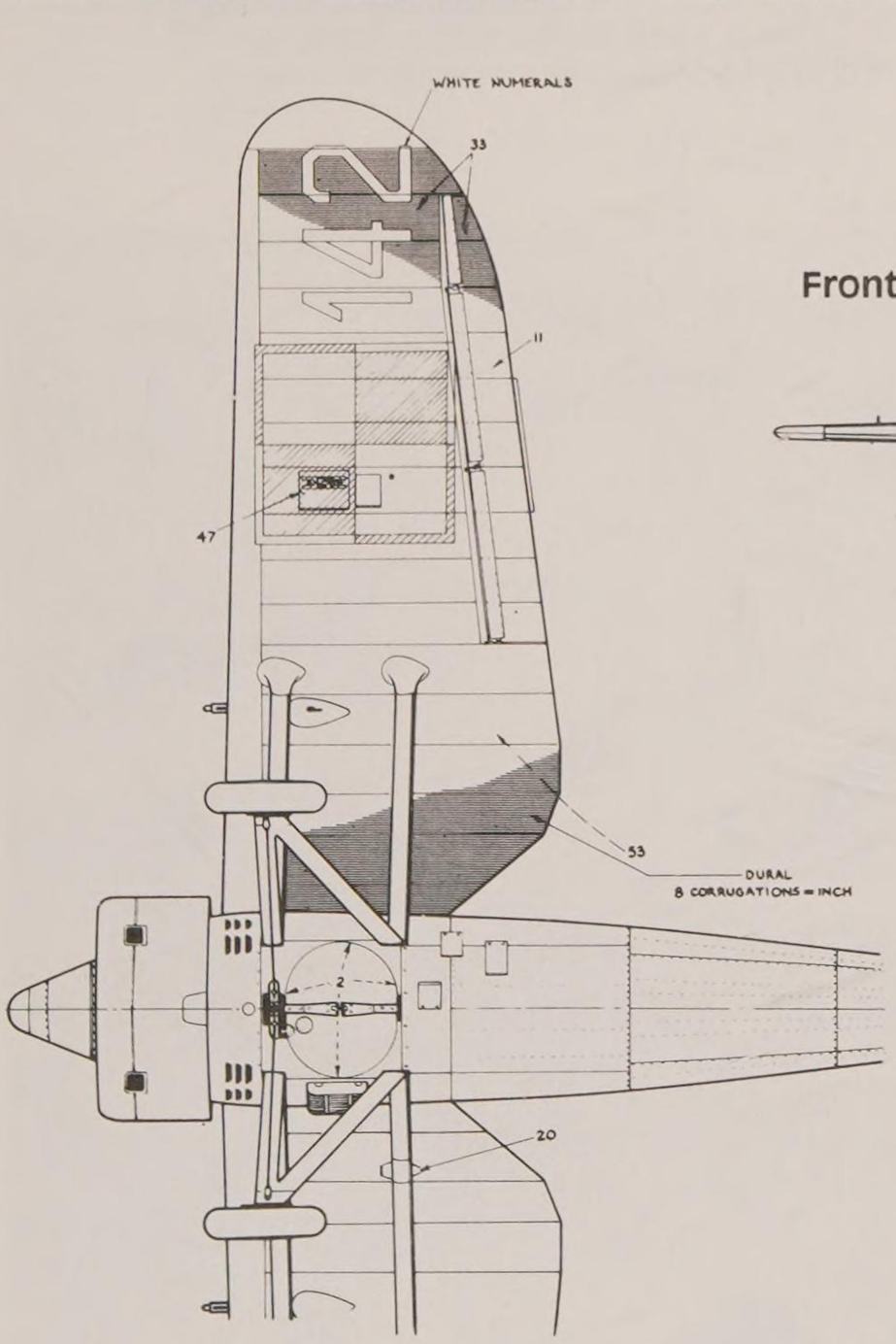
◀ **Plan view**



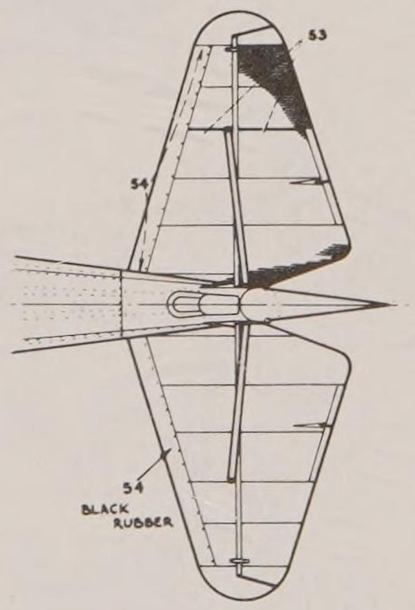
▲
Wing cross-sections

DRAWN BY Z A DATKIEWICZ

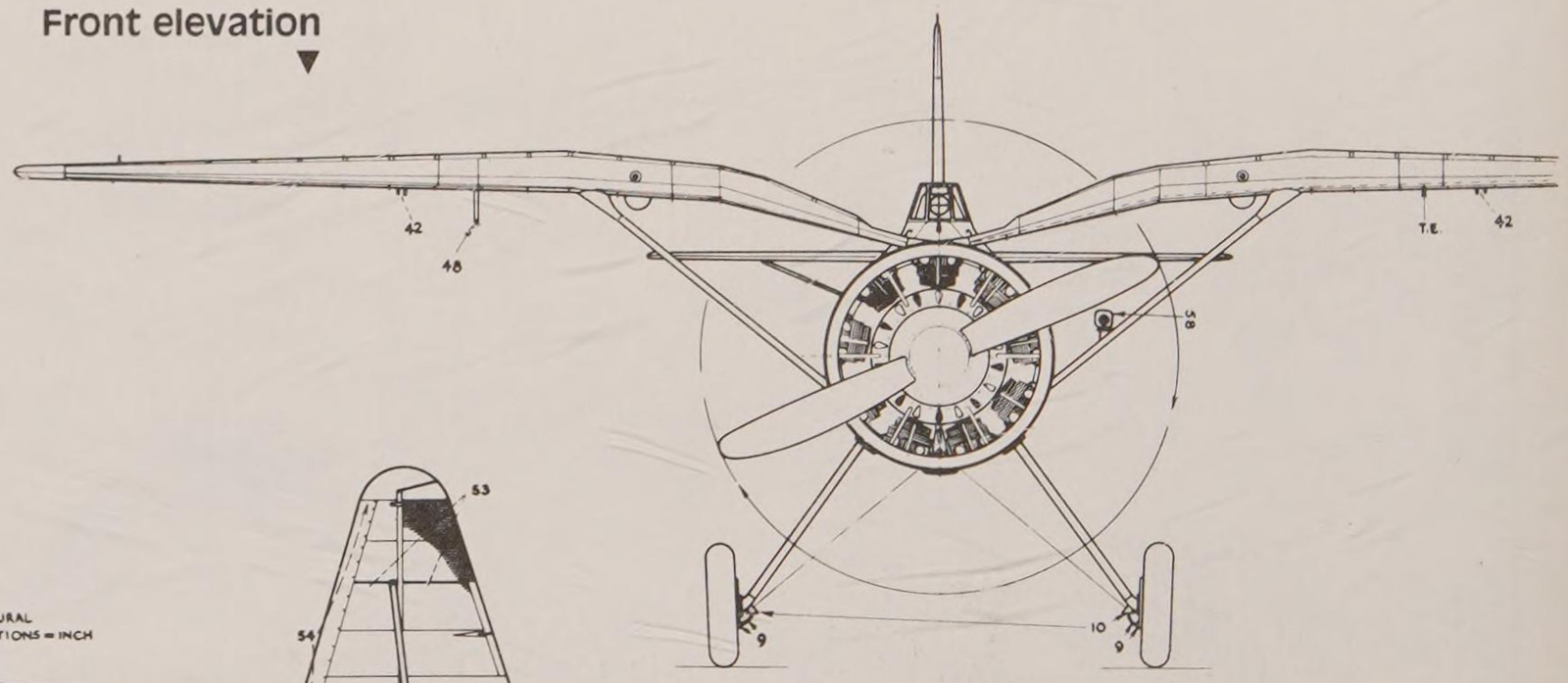
▲
A captured P11c is manhandled away. Note the faded national insignia on the upper wing and the 113 ('Owl') Squadron marking on the fuselage. (M Passingham)



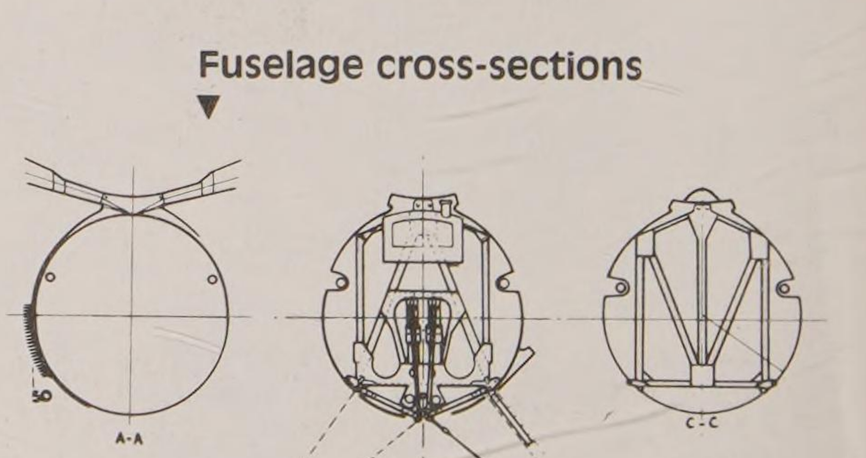
▲
Underplan



Front elevation
▼



Fuselage cross-sections
▼

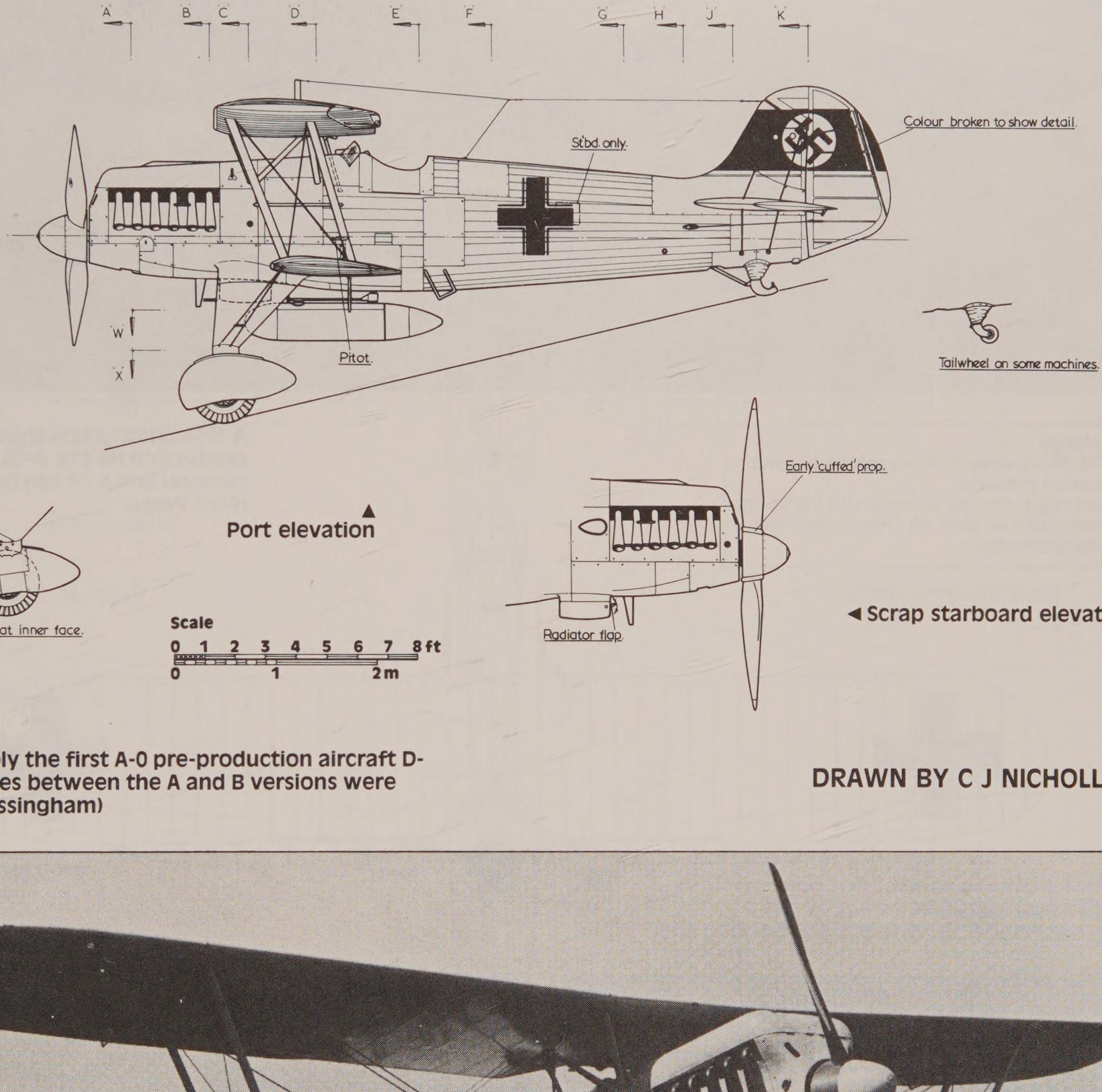


Heinkel He 51B-1

Country of origin: Germany.
Type: Single-seat, land-based fighter.
Dimensions: Wing span 36ft 1in *11.00m*; length 27ft 6¾in *8.40m*; height 10ft 6in *3.20m*; wing area 292.78 sq ft *27.2m²*.
Weights: Empty 3247lb *1472kg*; normal loaded 4189lb *1900kg*.

Powerplant: One BMW VI 7.3Z twelve-cylinder, liquid-cooled engine rated at 750hp.
Performance: Maximum speed 205mph *330kph* at sea level; time to 3280ft *1000m*, 1.4min; service ceiling 25,260ft *7700m*; range 354 miles *570km*.

Armament: Two fixed 7.9mm MG 17 machine guns.
Service: First flight (He 51a) summer 1933, (He 51A-0) July 1934, (A-1) April 1935; service entry (B-1) early 1936.



▲ Port elevation

◄ Scrap starboard elevation

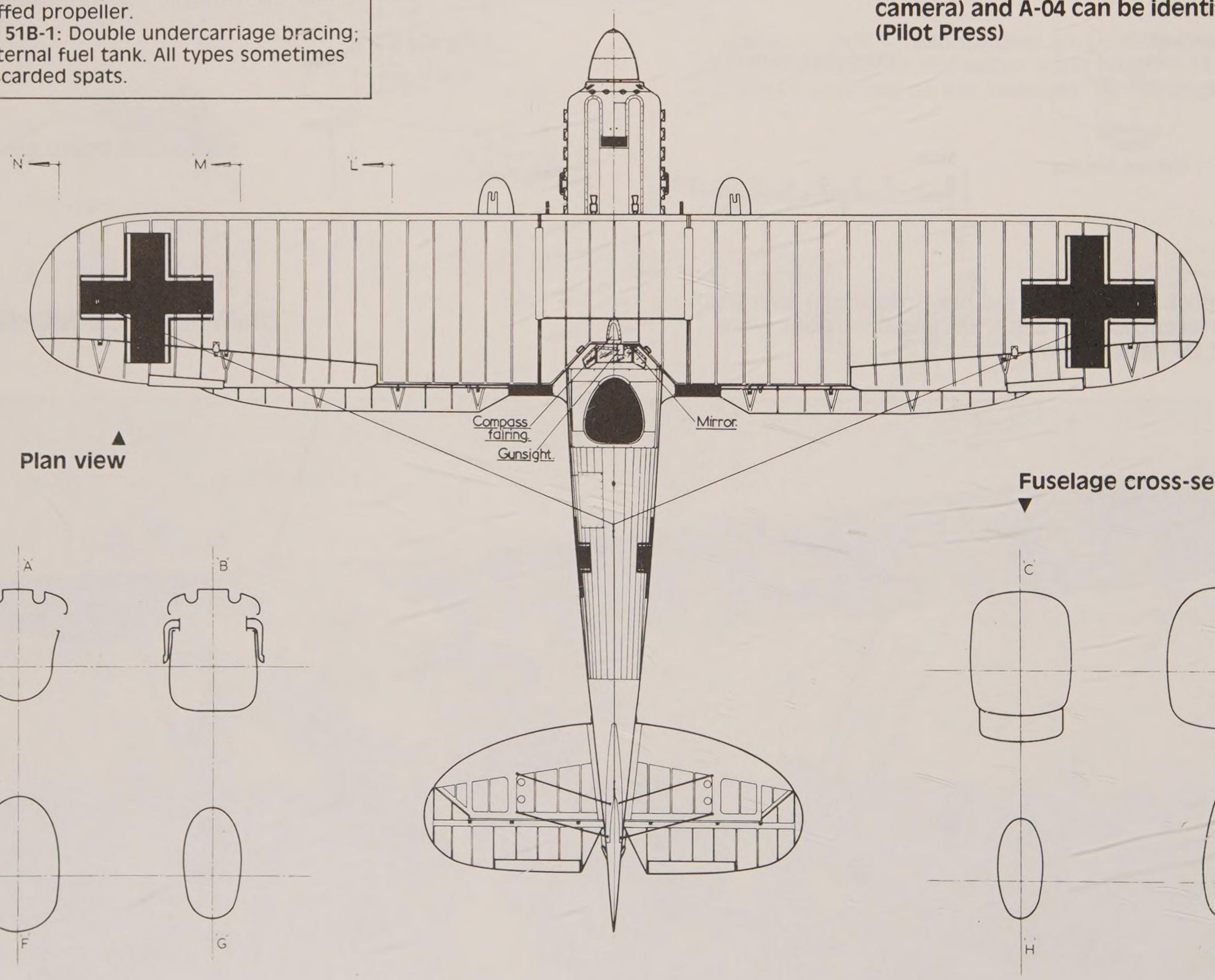
He 51A, probably the first A-0 pre-production aircraft D-IQEE. Differences between the A and B versions were minimal. (M Passingham)

DRAWN BY C J NICHOLLS

▼

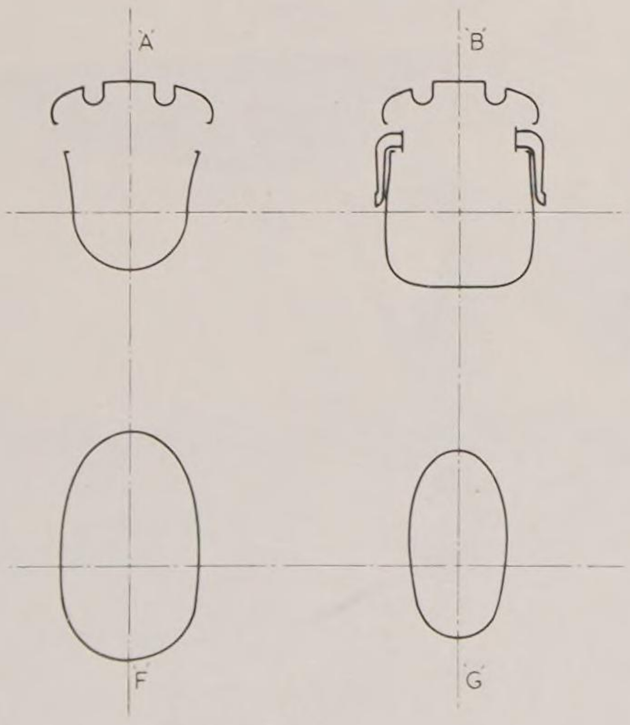
Notes
He 51A-1: Single undercarriage bracing; cuffed propeller.
He 51B-1: Double undercarriage bracing; external fuel tank. All types sometimes discarded spats.

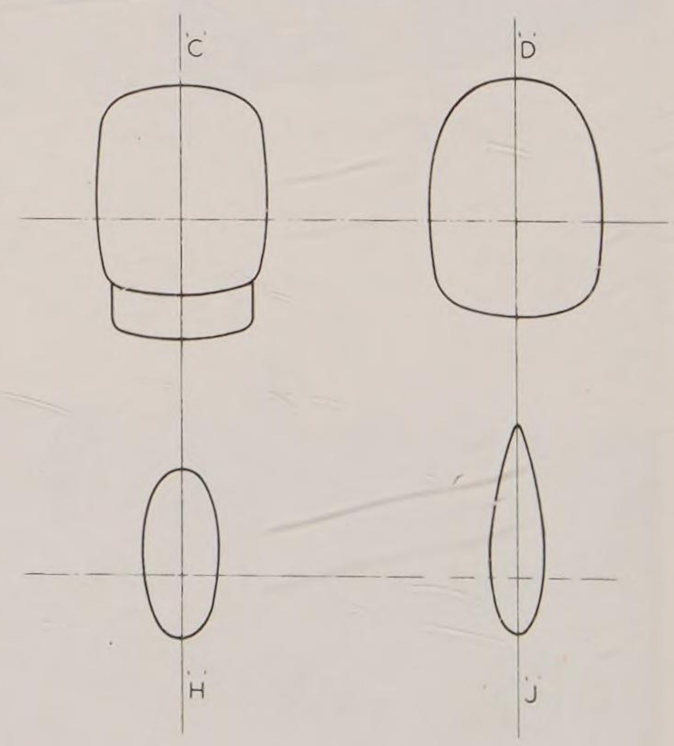
▲
A 1934 photograph showing three pre-production He 51s; A-05 (nearest camera) and A-04 can be identified. (Pilot Press)

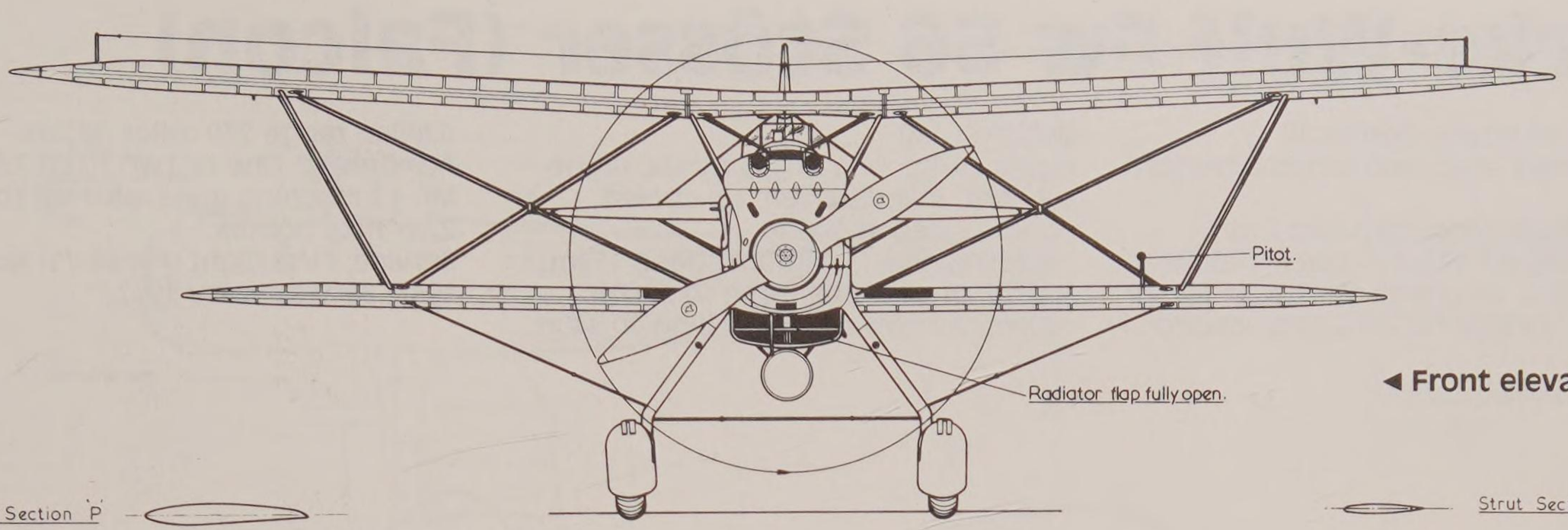


▲
Plan view

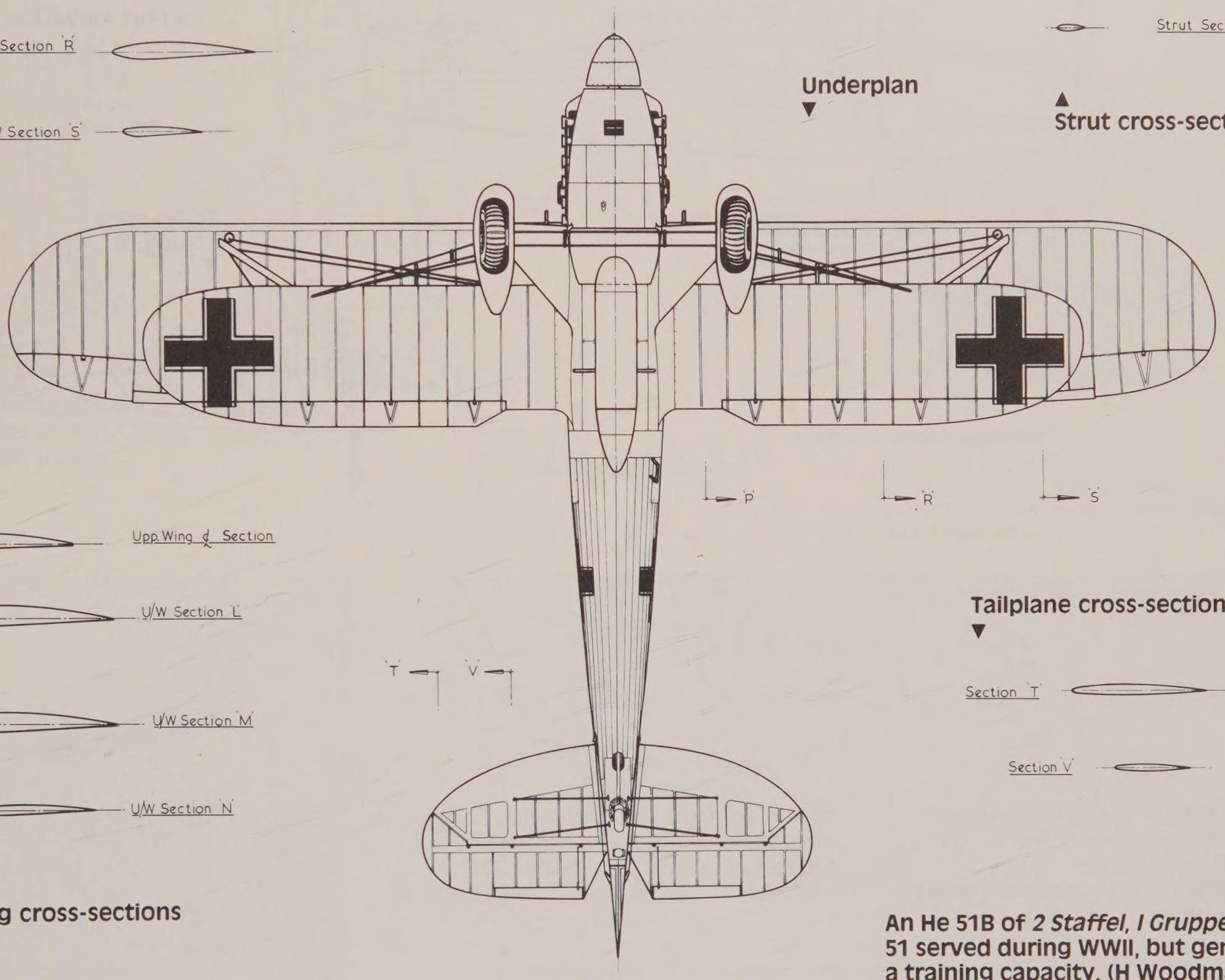
Fuselage cross-sections
▼







◀ **Front elevation**



Underplan
▼

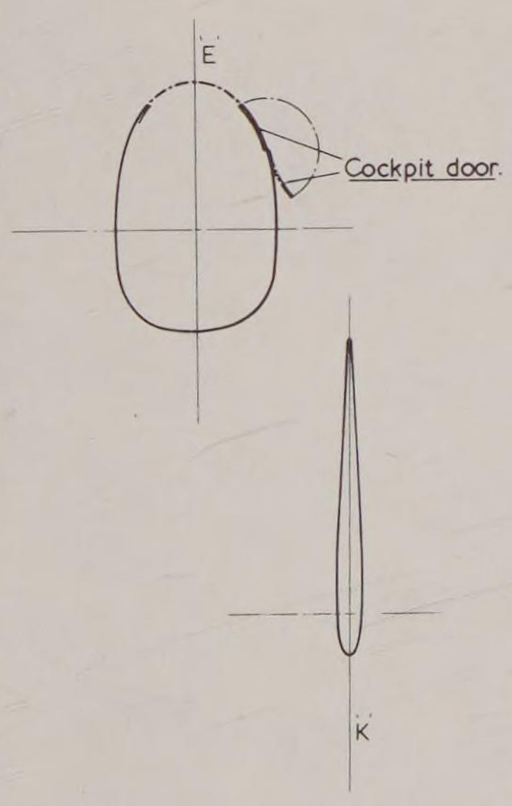
▲
Strut cross-sections

Tailplane cross-sections
▼

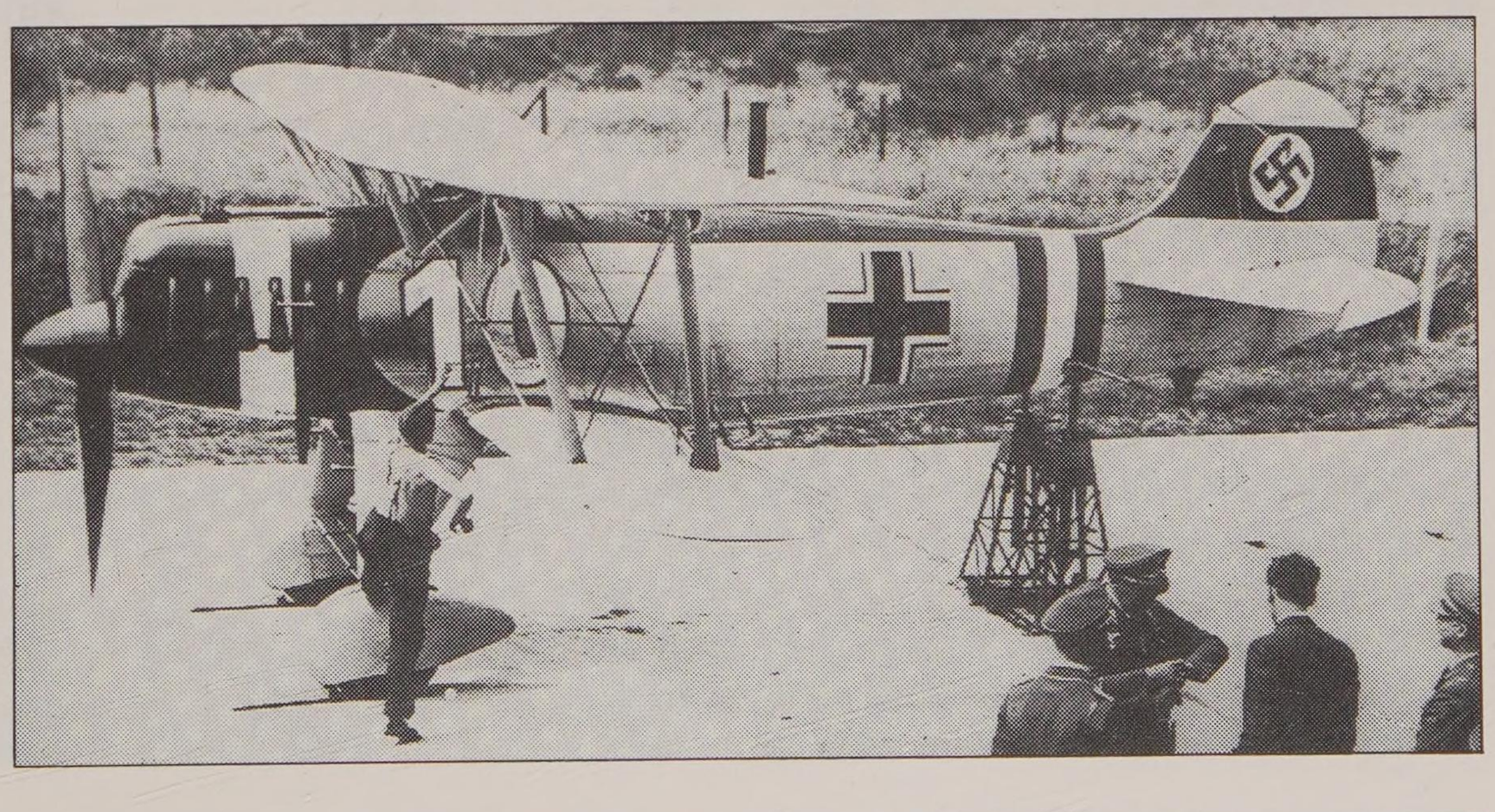
Section 'T'

Section 'V'

▲
Wing cross-sections

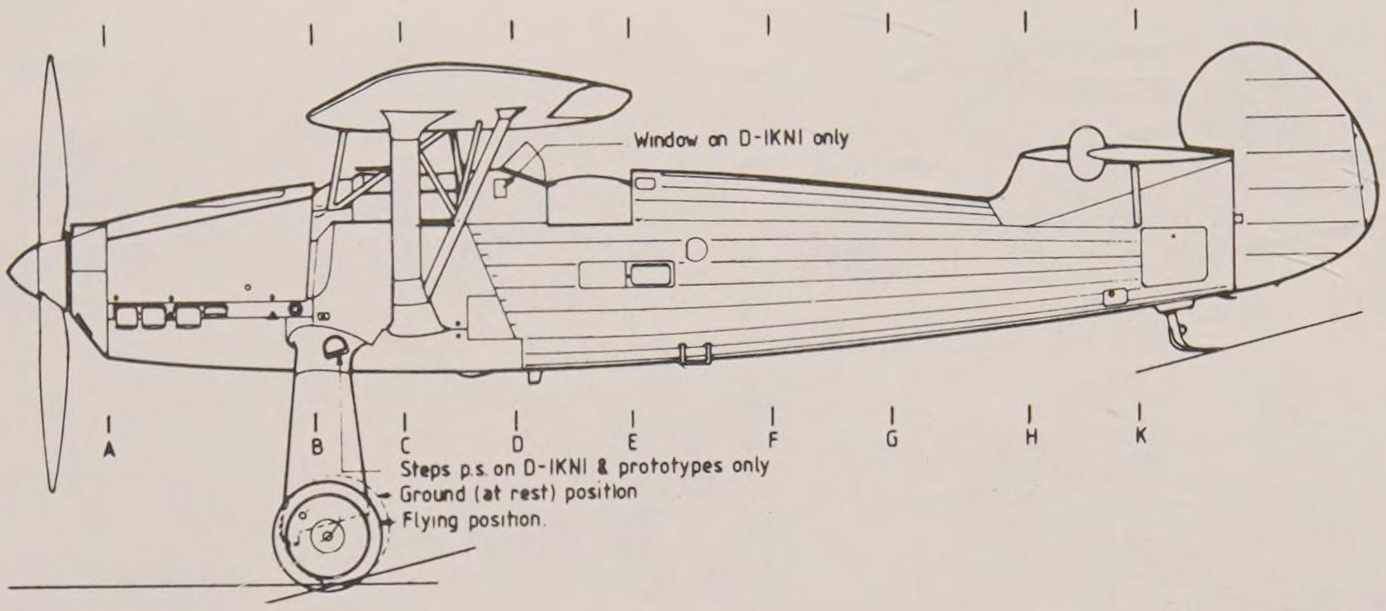


An He 51B of *2 Staffel, I Gruppe*. The He 51 served during WWII, but generally in a training capacity. (H Woodman)
▼



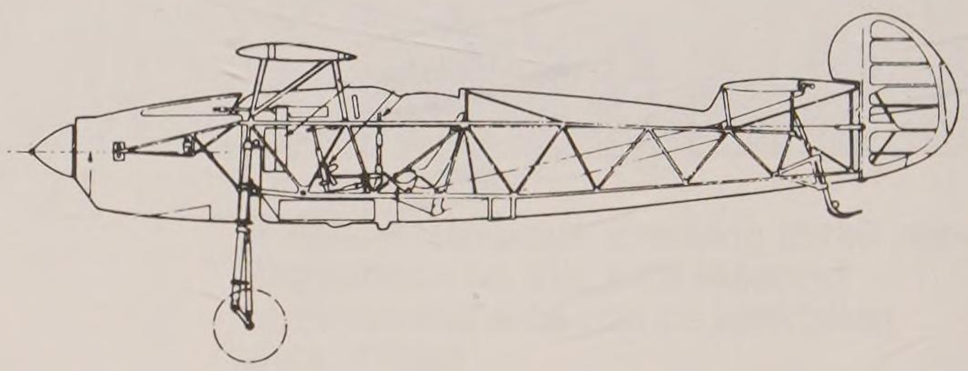
Focke-Wulf Fw 56 Stösser (Falcon)

Country of origin: Germany.
Type: Single-seat, land-based advanced trainer.
Dimensions: Wing span 34ft 7½in *10.55m*; length 25ft 1in *7.65m*; height 8ft 4½in *2.55m*; wing area 150.7 sq ft *14.0m²*.
Weights: Empty 1477lb *670kg*; loaded 2172lb *985kg*.
Powerplant: One Argus As 10C eight-cylinder, inverted-vee, air-cooled engine rated at 240hp.
Performance: Maximum speed 173mph *278kph* at sea level; time to 3280ft *1000m*, 2.2min; service ceiling 20,340ft *6200m*; range 239 miles *385km*.
Armament: One or two fixed 7.92mm MG 17 machine guns, plus up to three 22lb *10kg* bombs.
Service: First flight (Fw 56 V1) November 1933; service entry 1937.

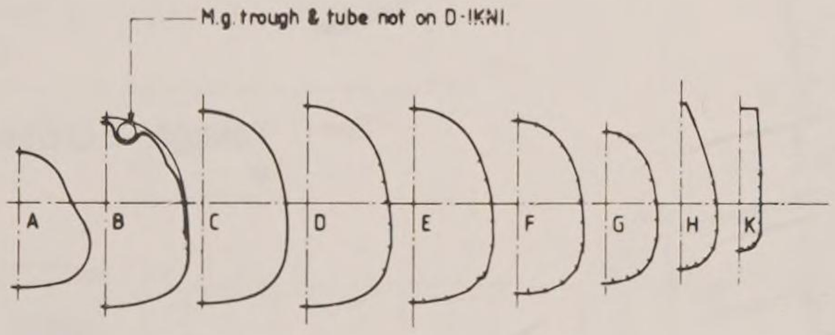


◄ **Port elevation**

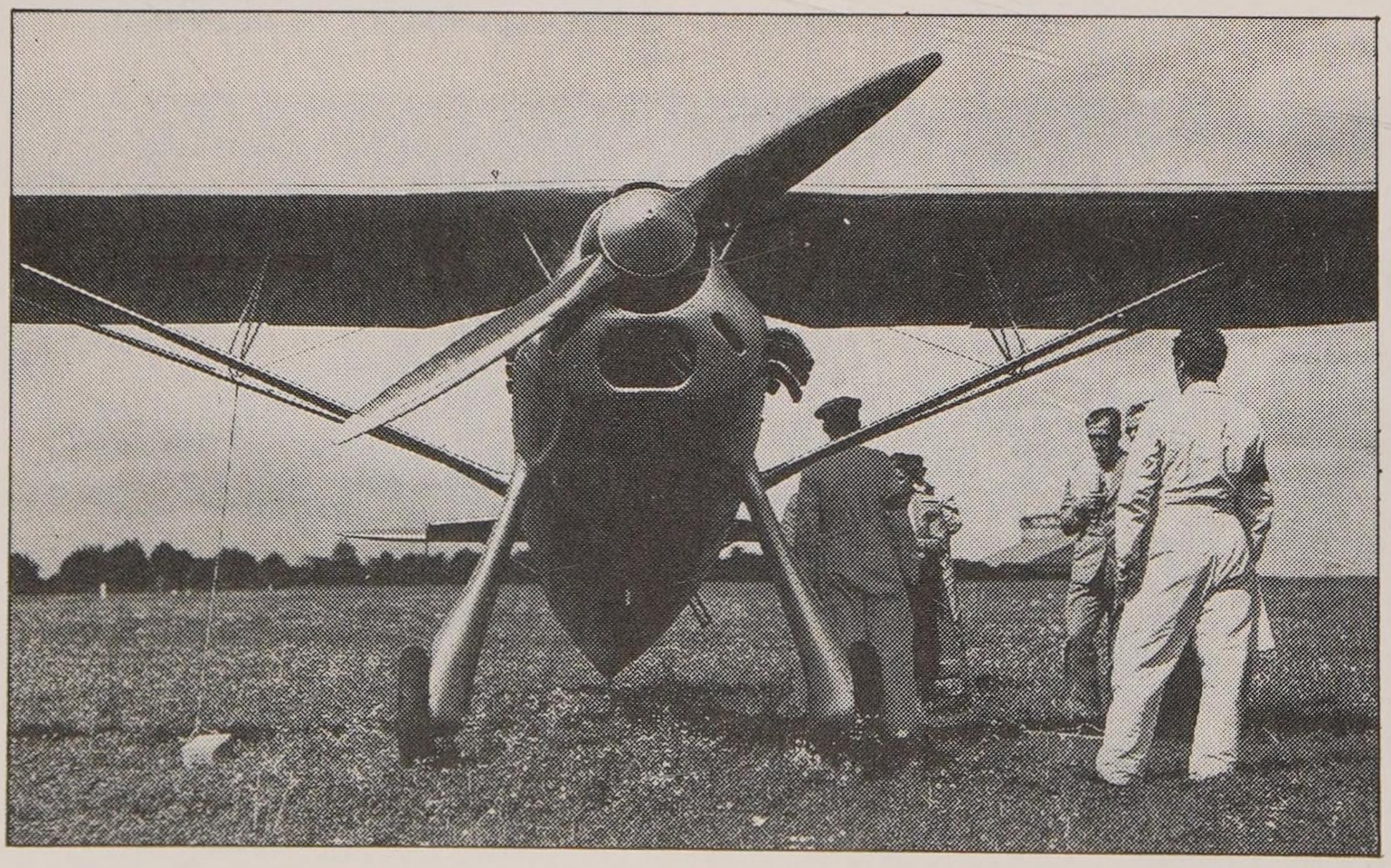
Scrap view
Structure
▼



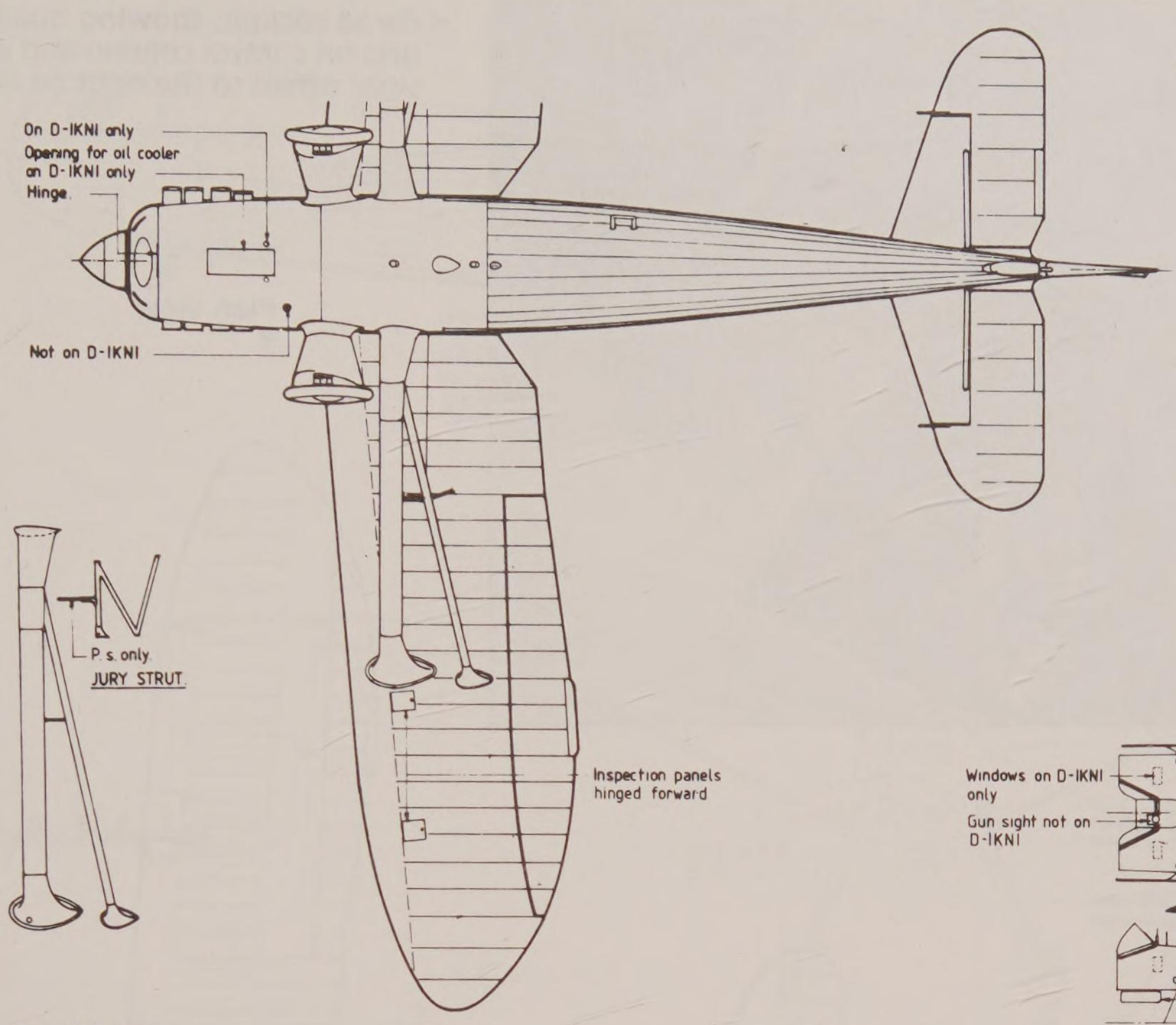
Fuselage cross-sections
▼



Head-on shot of D-IIZE shows the elegant streamlining of the Fw 56 parasol fighter-trainer. The asymmetric exhaust pipes are well in evidence here.
▼

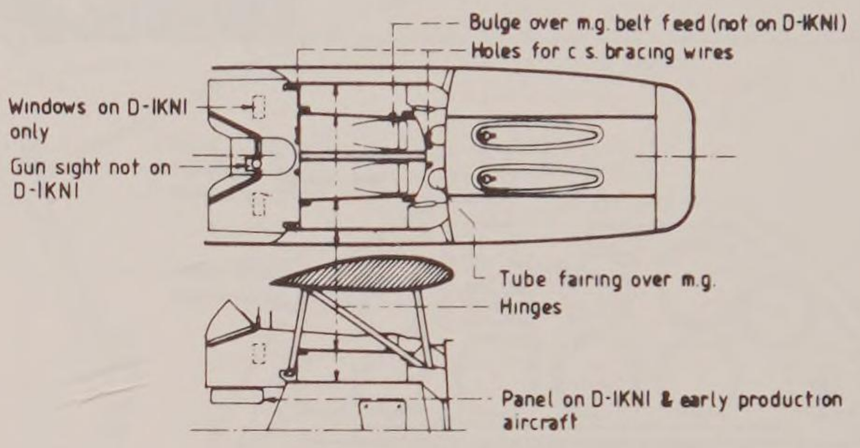


The celebrated aerobatic pilot Gerd Achgelis poses in his non-standard Stösser demonstrator D-IKNI (270hp Argus) at Los Angeles before the war. ►



◄ Underplan

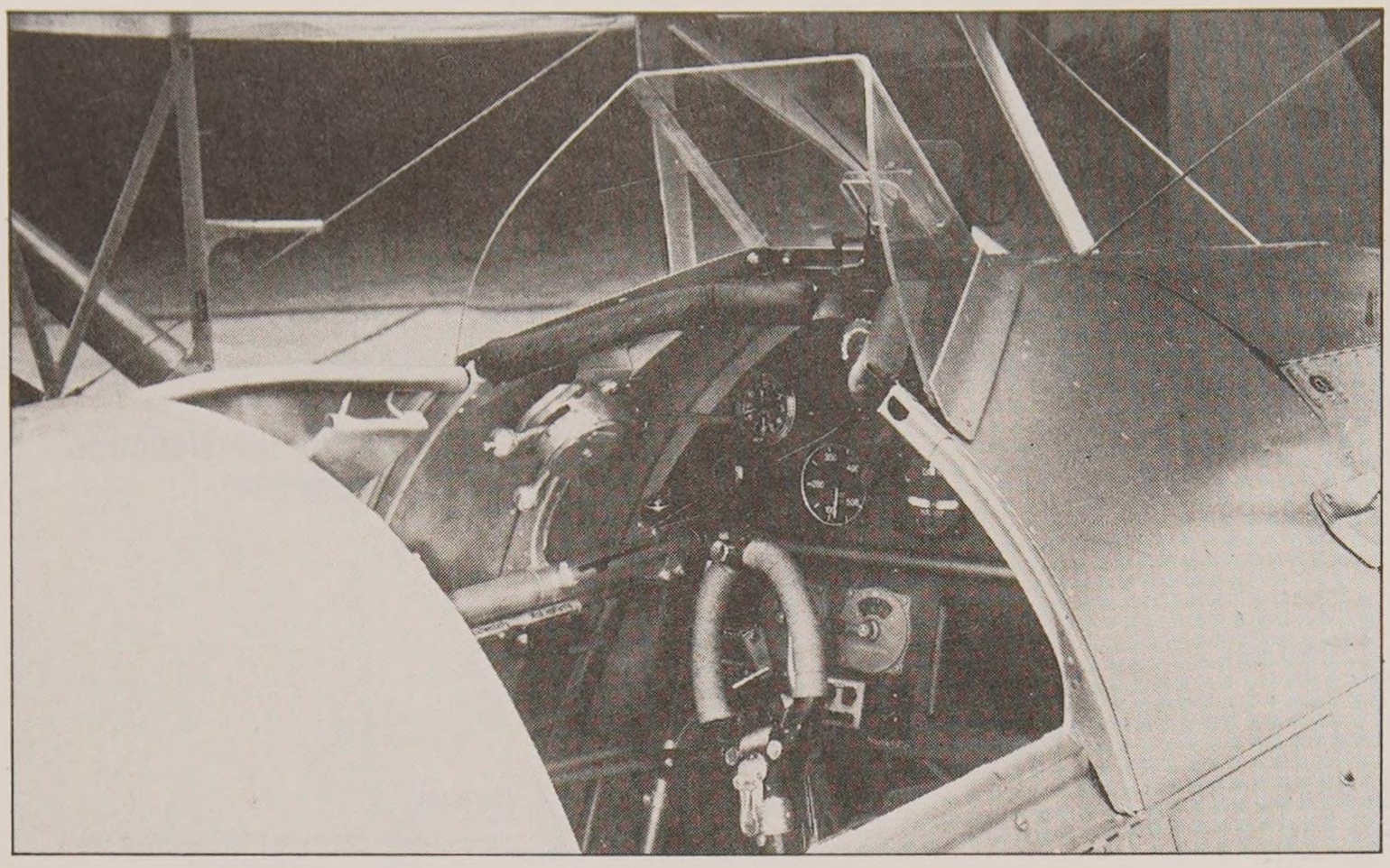
▲ Wing cross-section (approx)


Bulge over m.g. belt feed (not on D-IKNI)
Holes for c.s. bracing wires
Windows on D-IKNI only
Gun sight not on D-IKNI
Tube fairing over m.g.
Hinges
Panel on D-IKNI & early production aircraft

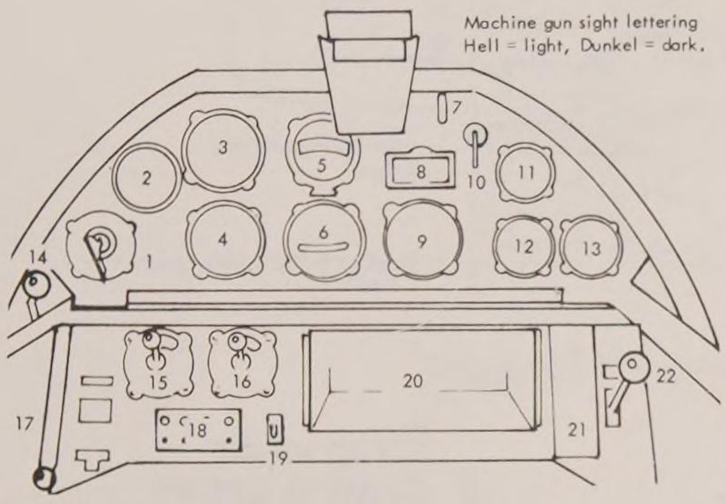
Scrap underplan ▲
True view of wing strut, starboard side

Scale
0 1 2 3 4 5 6 7 8 ft
0 1 2 m

▲ **Scrap views**
Cowling details

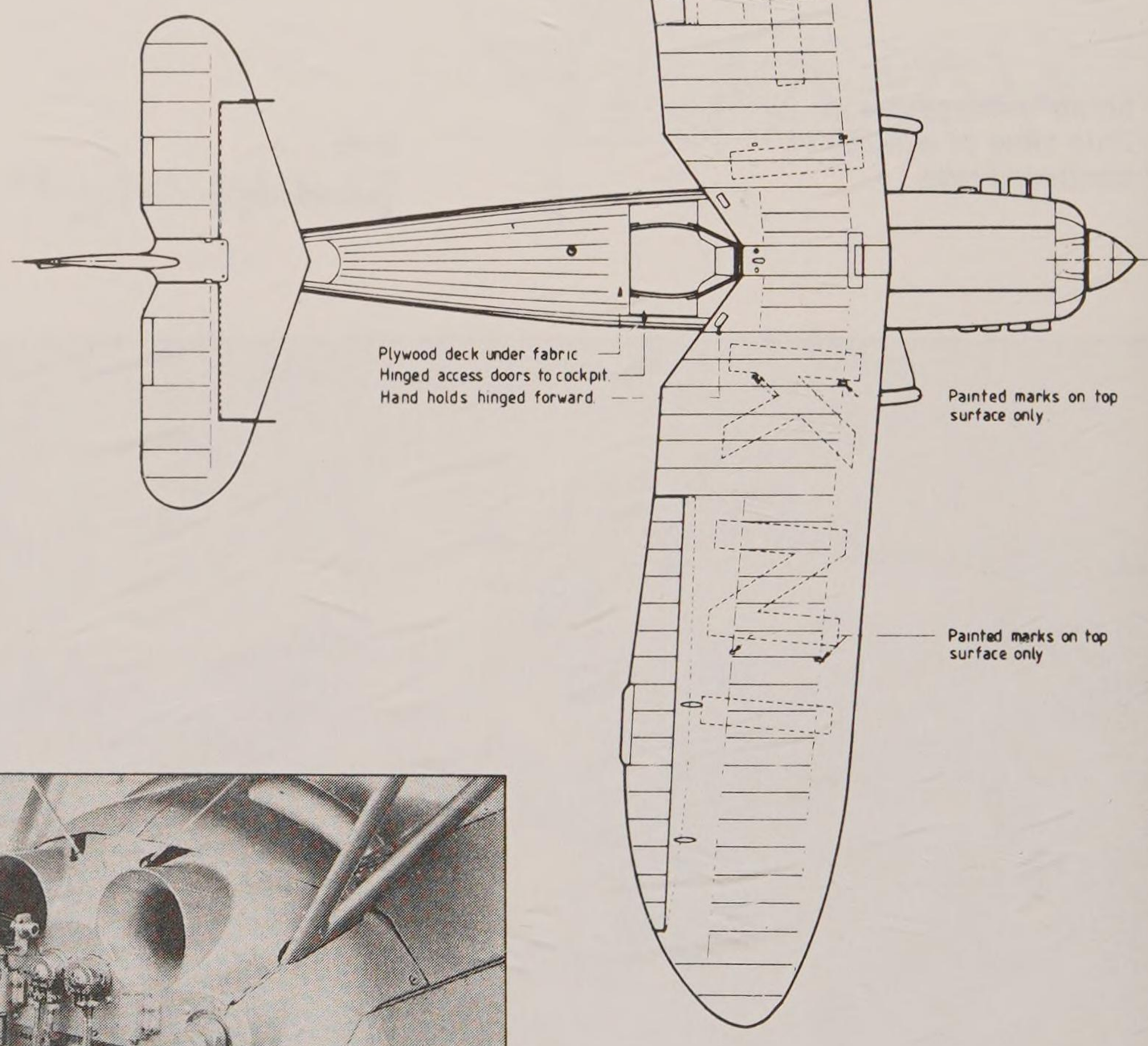


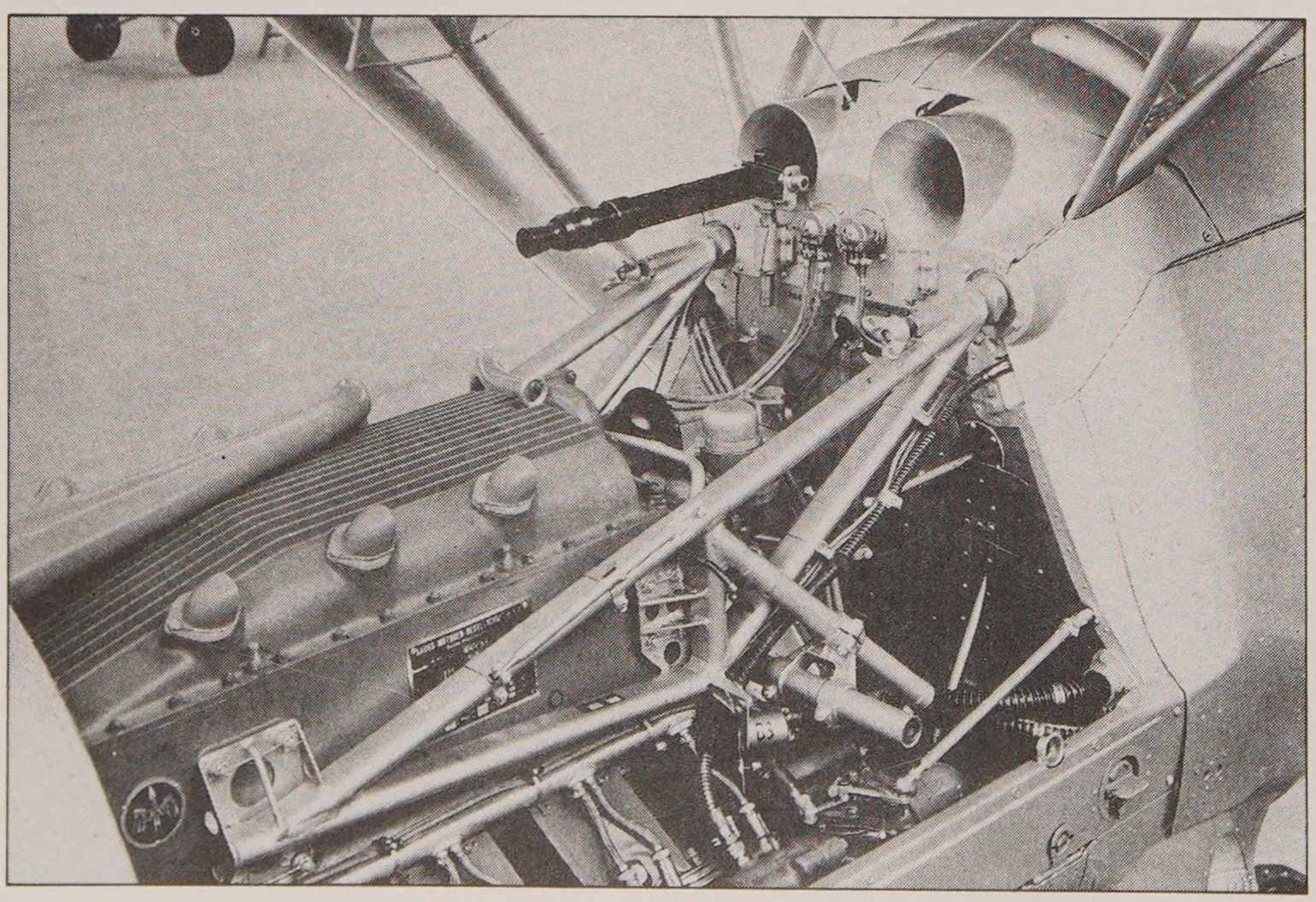
◀ Fw 56 cockpit, showing 'spade' type grip on control column and Revi gun sight offset to the right on top of cowl.



Key to cockpit layout

1. Switch. **2.** Clock. **3.** Altimeter. **4.** Air speed indicator. **5.** Compass (with magnet adjustments top and bottom). **6.** Turn indicator. **7.** Electric machine gun sight plug. **8.** Compass deviation card. **9.** Engine rpm. **10.** Carburettor heat switch. **11.** Manifold pressure. **12.** Oil pressure. **13.** Oil temperature. **14.** Dive brake. **15.** Elevator trim. **16.** Rudder trim. **17.** Fuel cut-off. **18.** Fuel reserve switches. **19.** Generator on/off. **20.** Map case. **21.** Aircraft service card. **22.** Hand pump.


Plan view
Plywood deck under fabric
Hinged access doors to cockpit
Hand holds hinged forward
Painted marks on top surface only
Painted marks on top surface only



◀ Forward fuselage top panelling removed to reveal pristine engine and mountings, with starboard machine gun installed above. Note Argus logo on forward crankcase.

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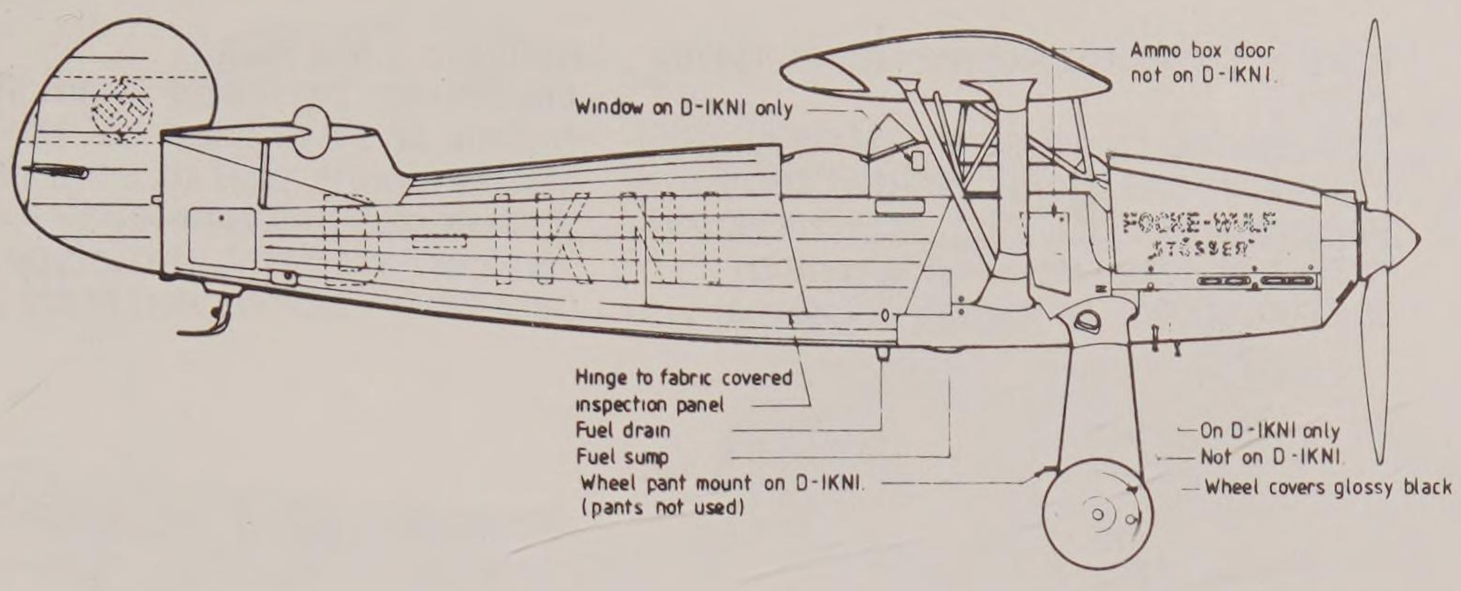
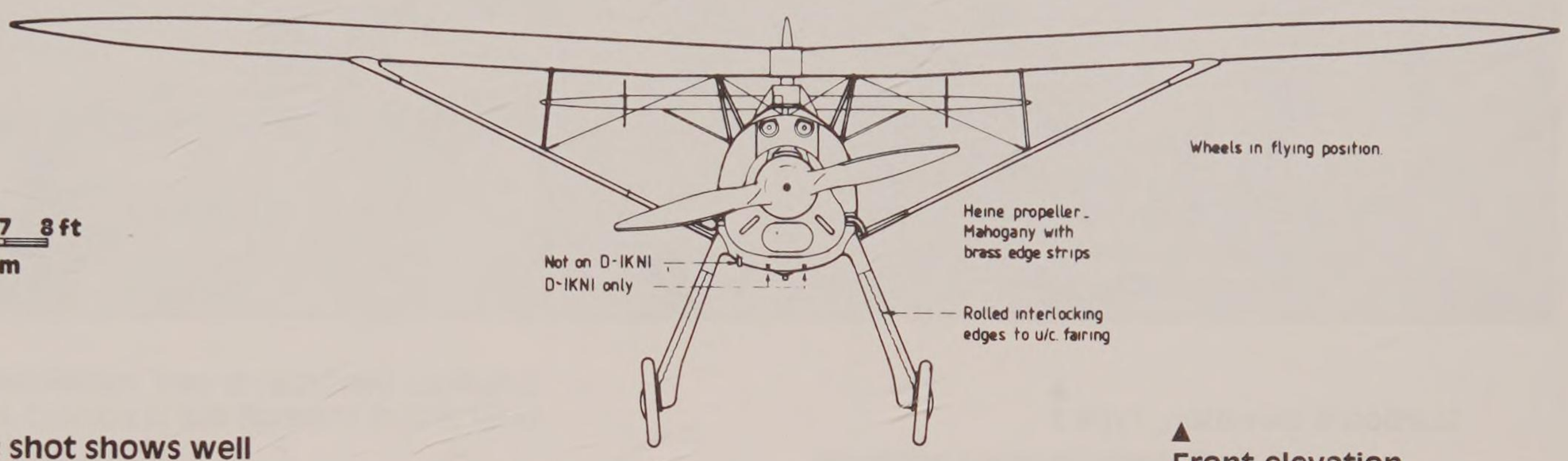


◀ Starboard elevation



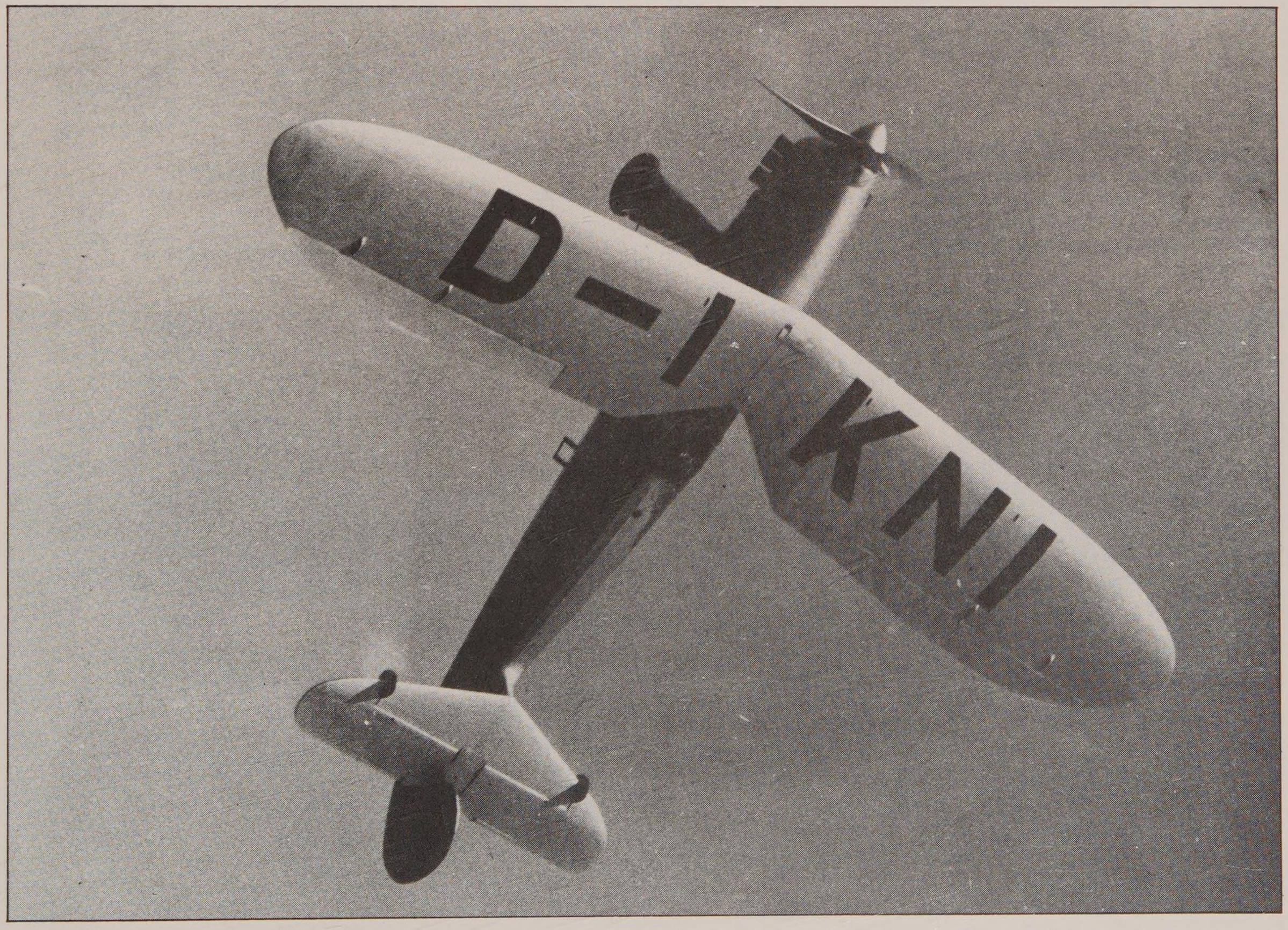
▲
Front elevation

Scale

0 1 2 3 4 5 6 7 8 ft

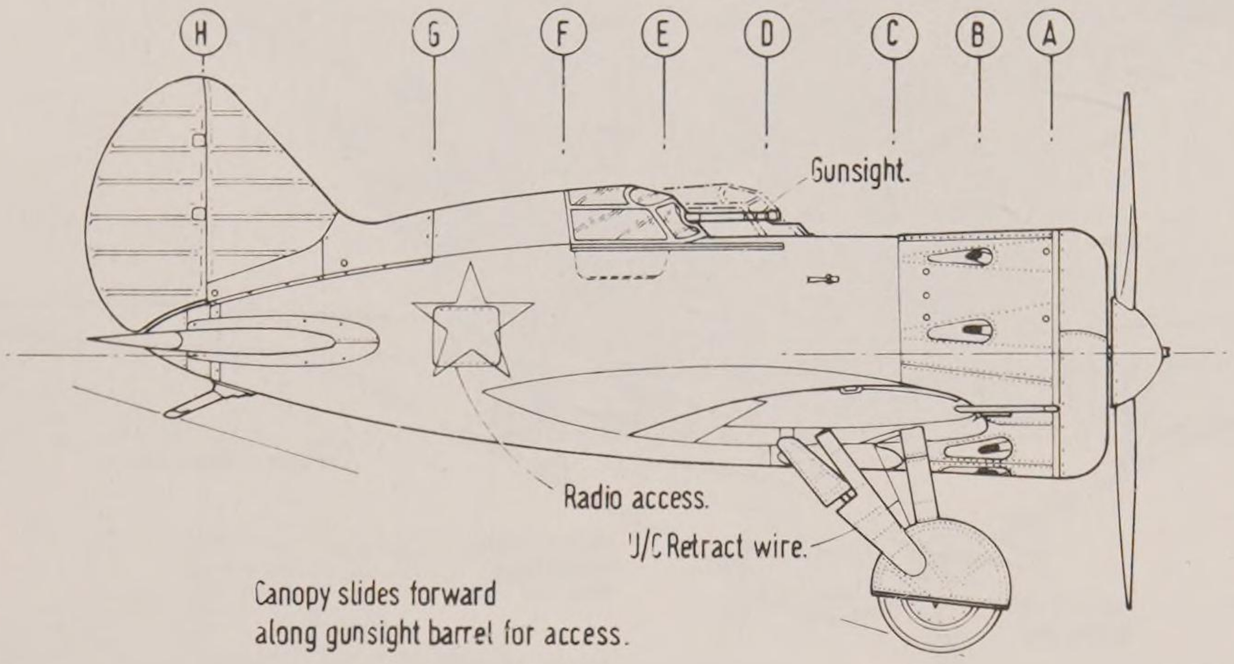
0 1 2 m

Peacetime aerobatic shot shows well the Fw 56's wing planform, with tailplane set well forward from the fin.
▼



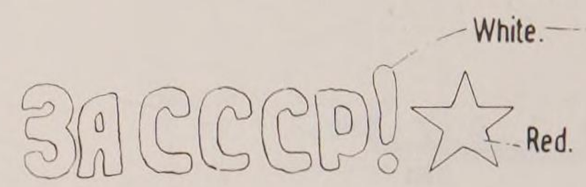
Polikarpov I-16

Country of origin: USSR.
Type: Single-seat, land-based fighter and fighter-bomber.
Dimensions: Wing span 29ft 6½in *9.00m*; length 20ft 1¼in *6.13m*; height 8ft 5in *2.57m*; wing area 161 sq ft *14.96m²*.
Weights: Empty 3285lb *1490kg*; normal loaded 4212lb *1910kg*; maximum 4547lb *2062kg*.
Powerplant: One Shvetsov M-62 nine-cylinder radial engine rated at 1000hp.
Performance: Maximum speed 326mph *525kph* at sea level; service ceiling 29,500ft *9000m*; range (max external fuel) 435 miles *700km*.
Armament: Two fixed 20mm ShVAK cannon and two fixed 7.62mm ShKAS machine guns, plus six 82mm RS82 rockets or equivalent load.
Service: First flight (prototype) December 1933; service entry late 1934.



DRAWN BY A A P LLOYD

MARKINGS FOR
N°13 "Za USSR".

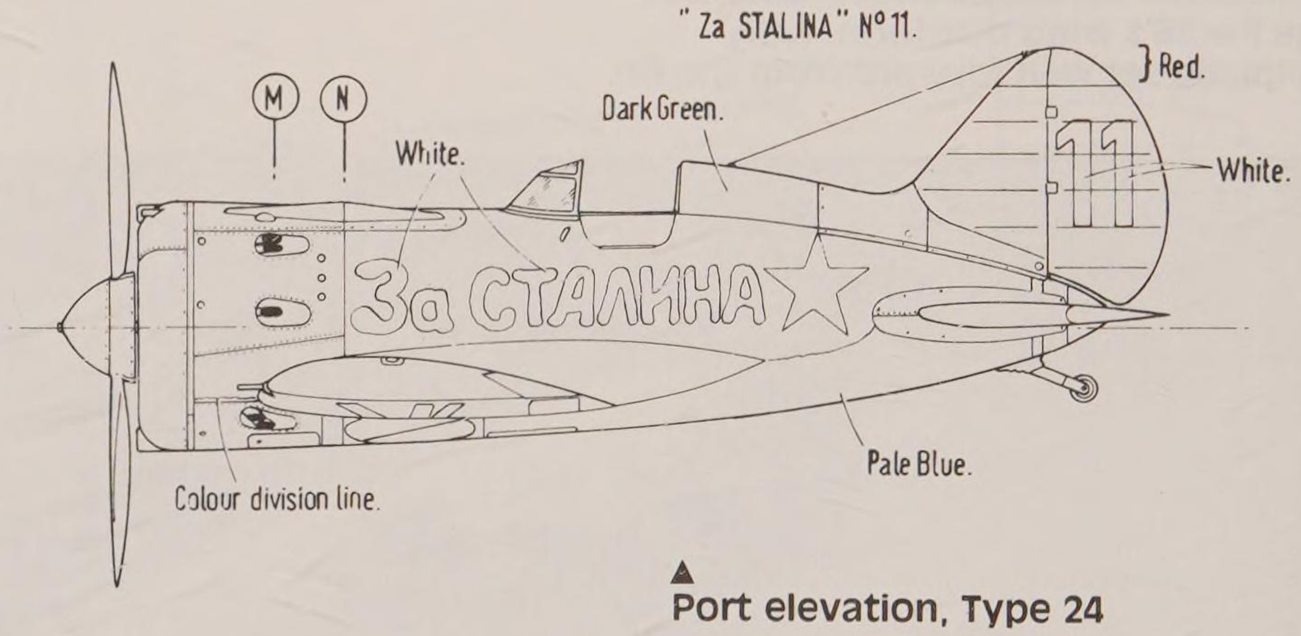


13

▲
Starboard elevation, Type 5

Scale
0 1 2 3 4 5 6 7 8ft
0 1 2m

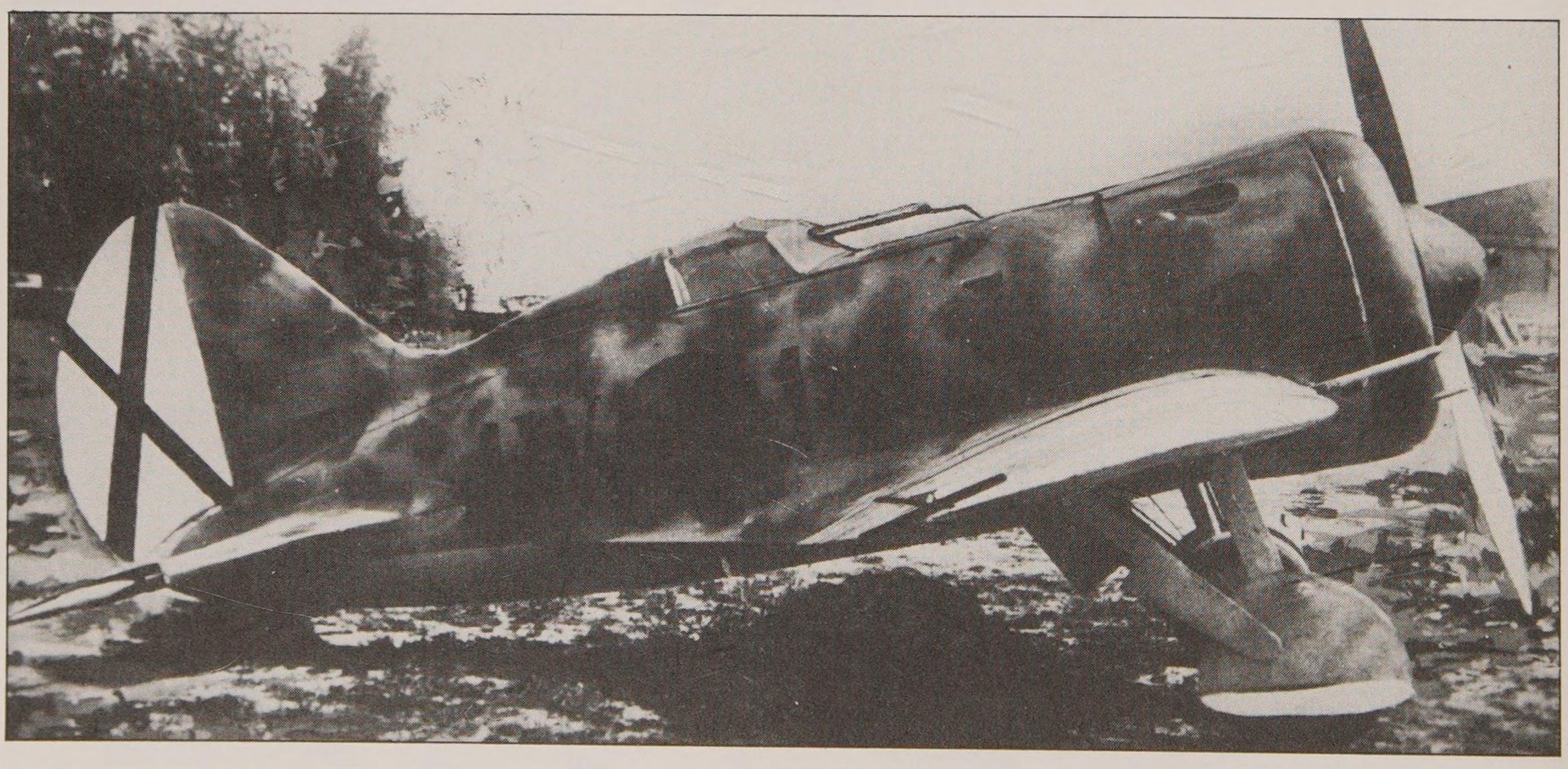
" Za STALINA" N° 11.

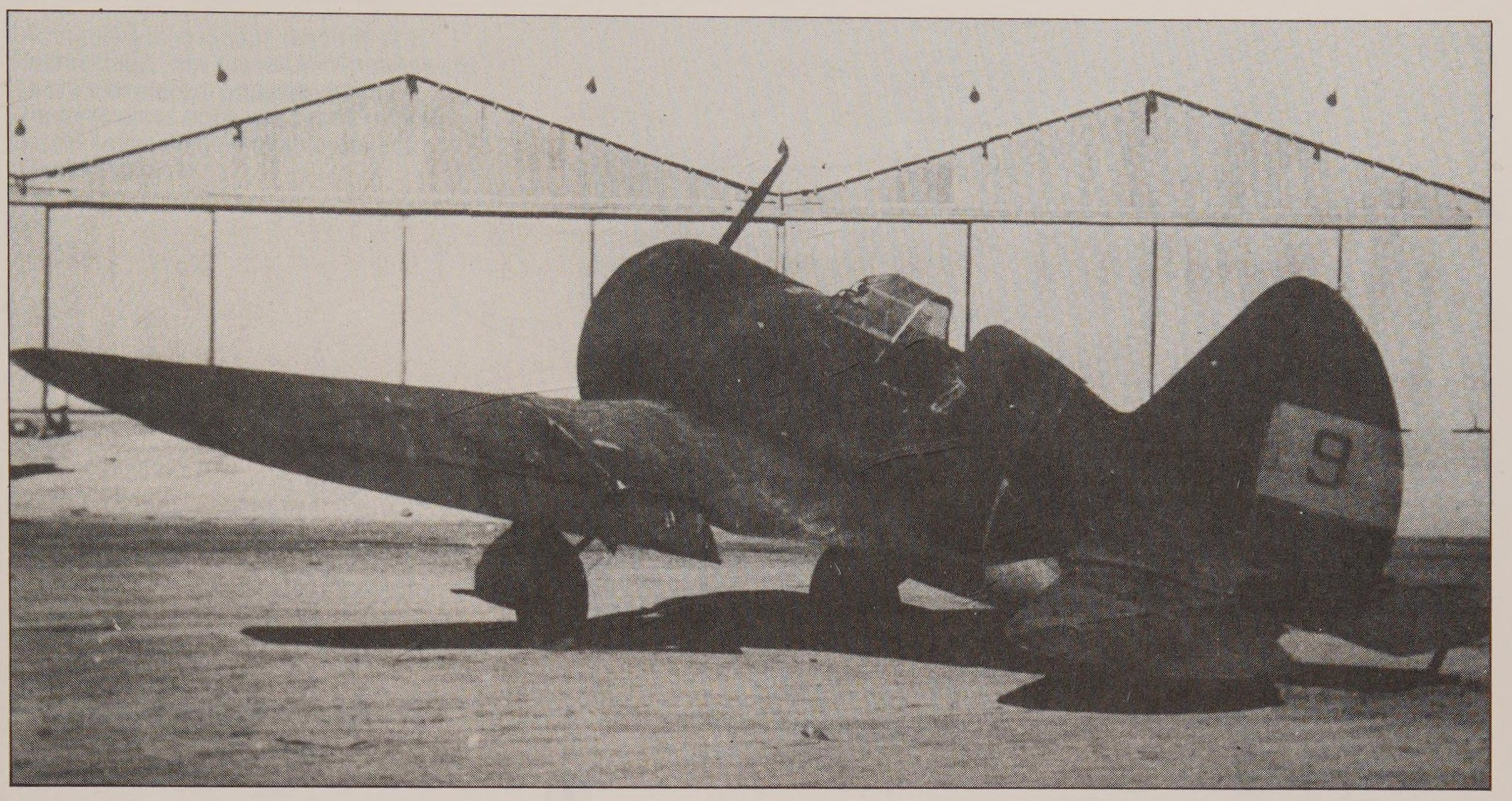


I-16s fought in the Spanish Civil War on both sides; this Type 6, powered by a 730hp M-25A, was one of a number supplied to the Republican Air Force. Note cockpit canopy slid into the aft position.

▲
Port elevation, Type 24

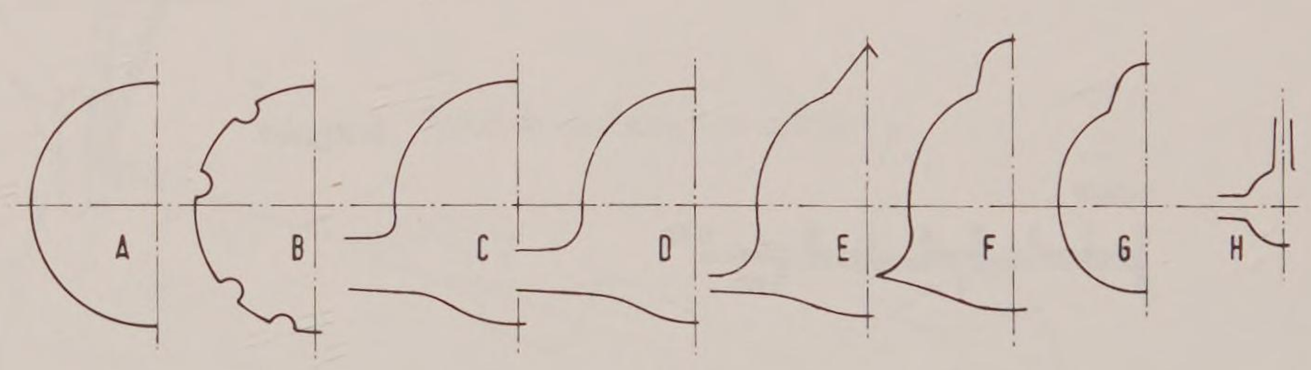
▼

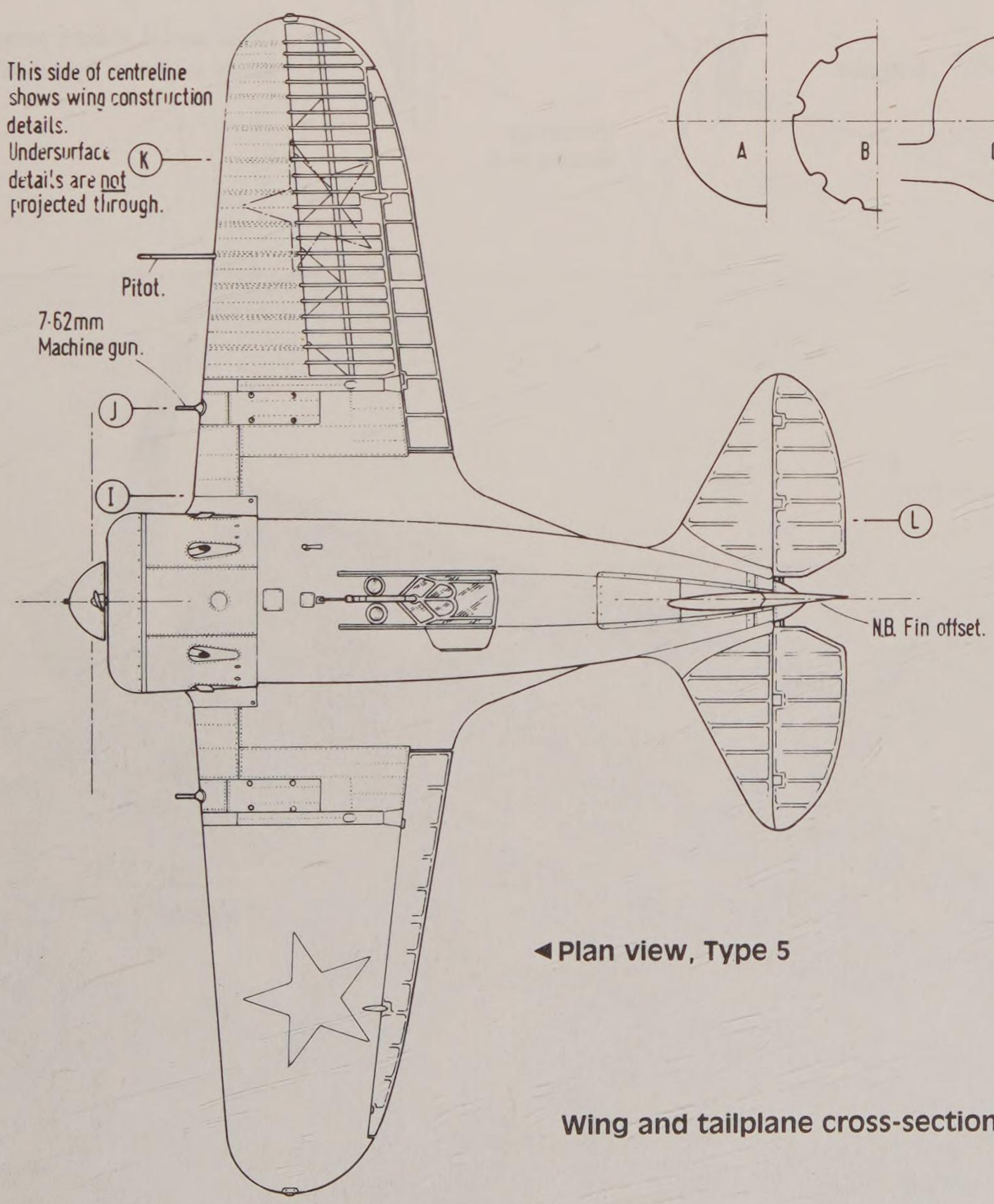


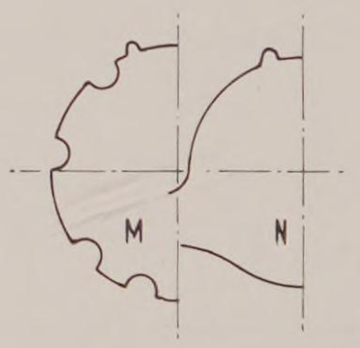


▲
Type 6 in Nationalist markings, one of eighteen captured from the Republicans. Canopy is slid forward in this view.

Fuselage cross-sections, Type 5
▼



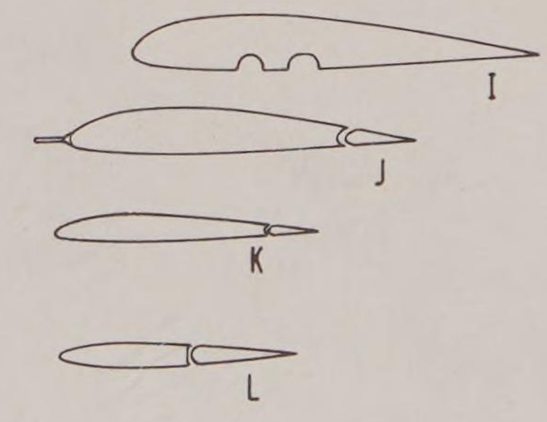


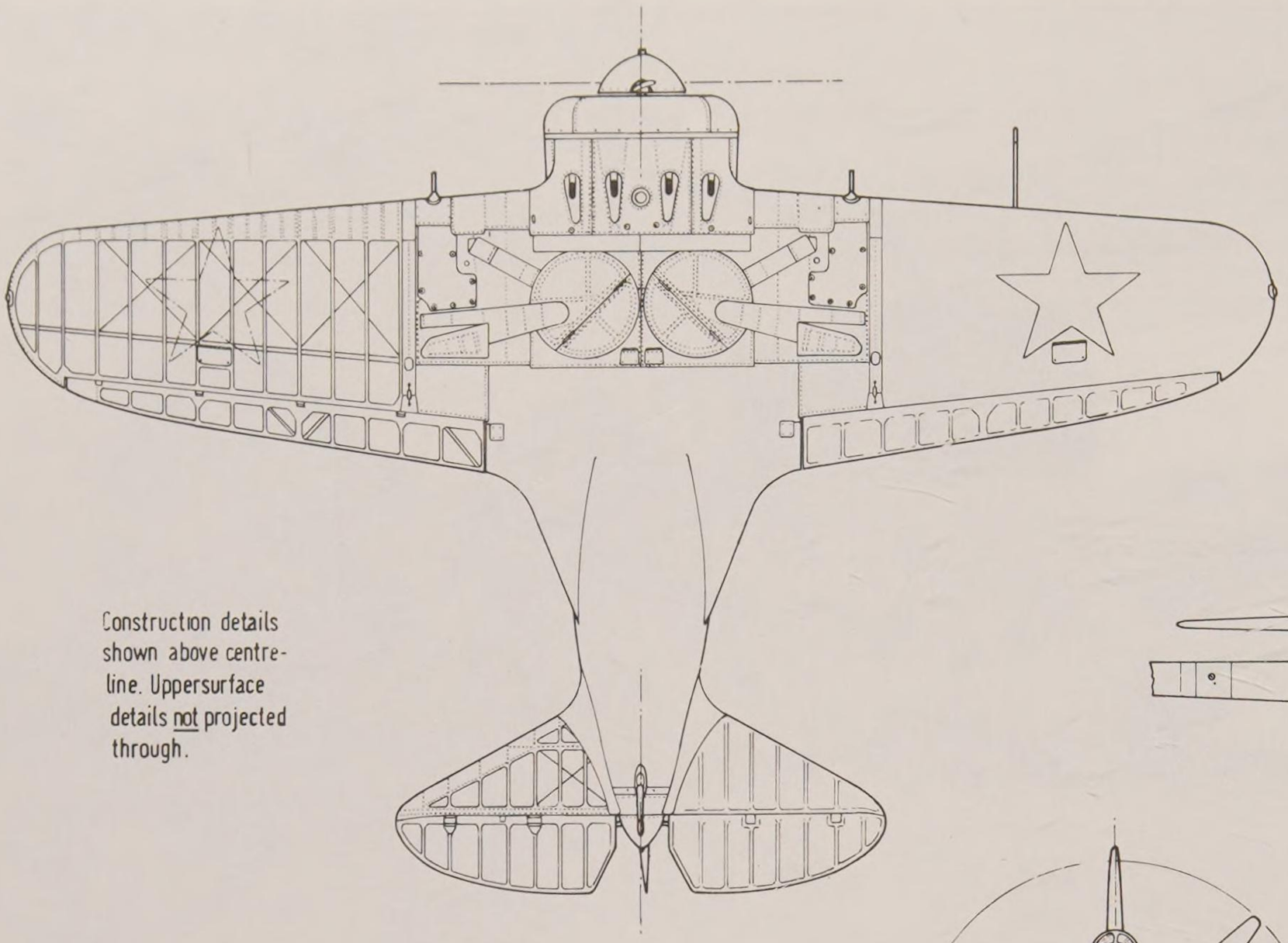


▲
Fuselage cross-sections, Type 24

◄ **Plan view, Type 5**

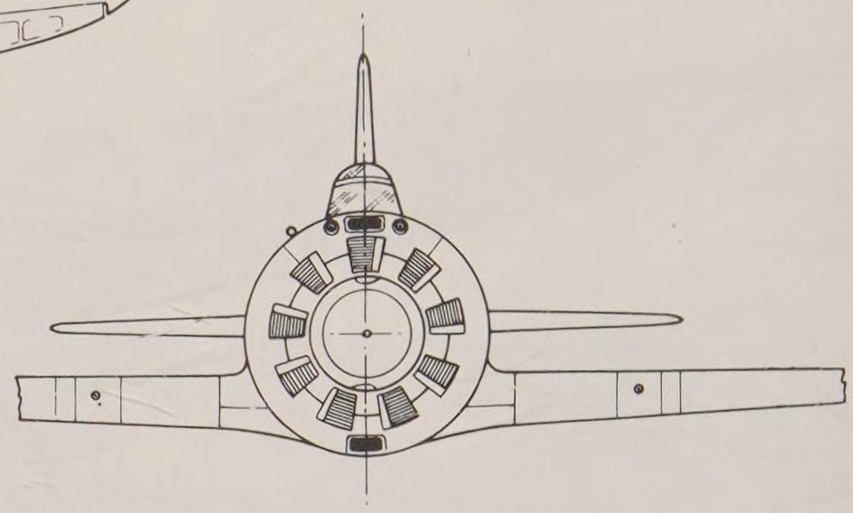
Wing and tailplane cross-sections ►





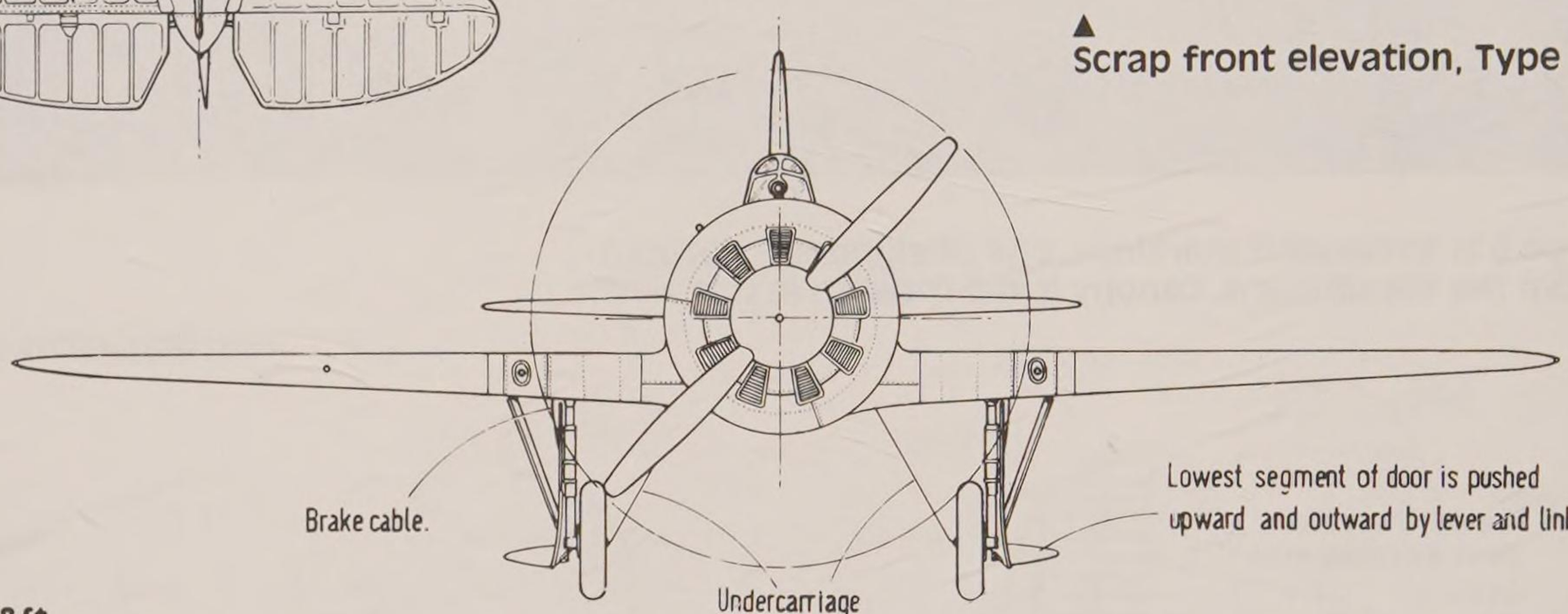
Construction details shown above centre-line. Uppersurface details not projected through.

▲Underplan, Type 5



▲
Scrap front elevation, Type 24

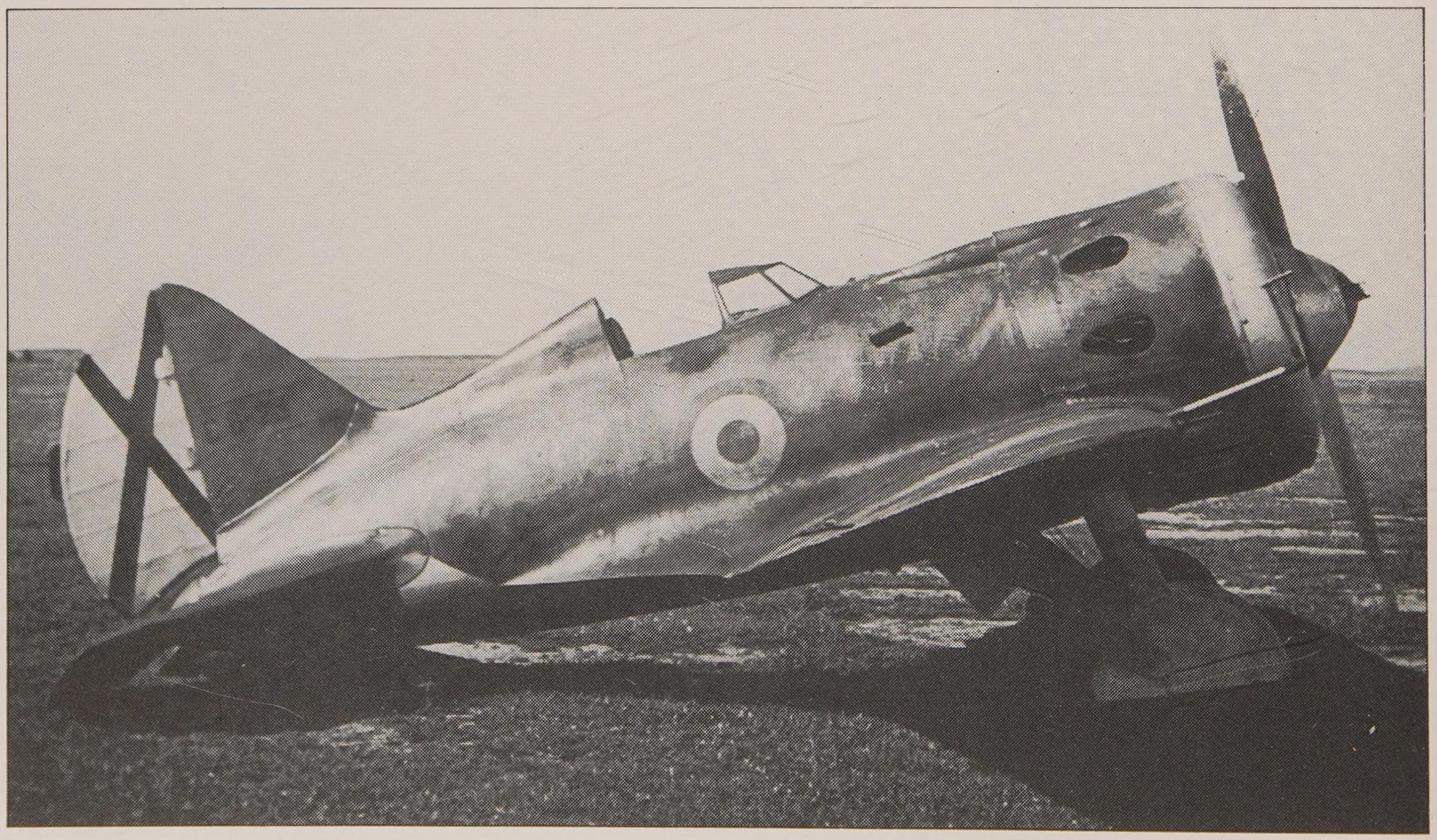
Front elevation, Type 5 ►



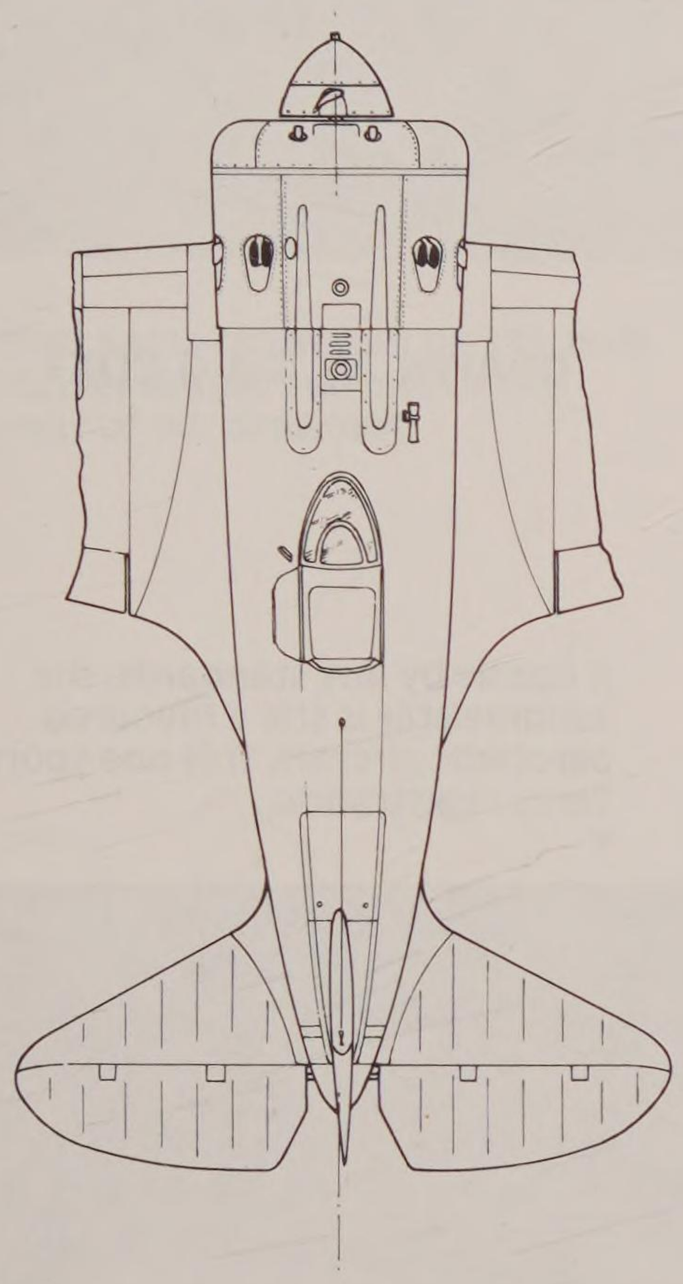
Scale

0 1 2 3 4 5 6 7 8 ft

0 1 2 m

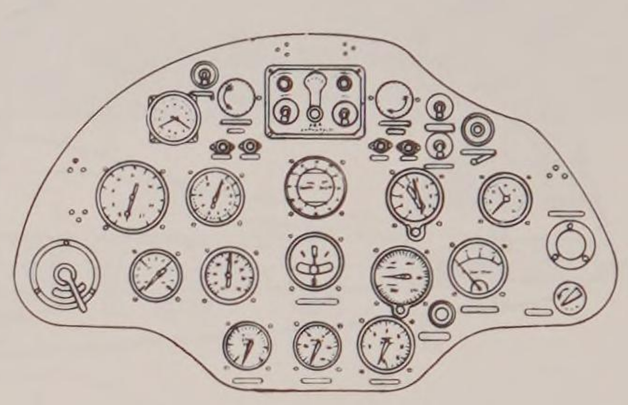


Advanced in concept when first introduced, the Soviet Air Force's I-16s were obsolete by 1941 but they nevertheless bore the brunt of the early *Luftwaffe* offensive during 'Barbarossa'. ►

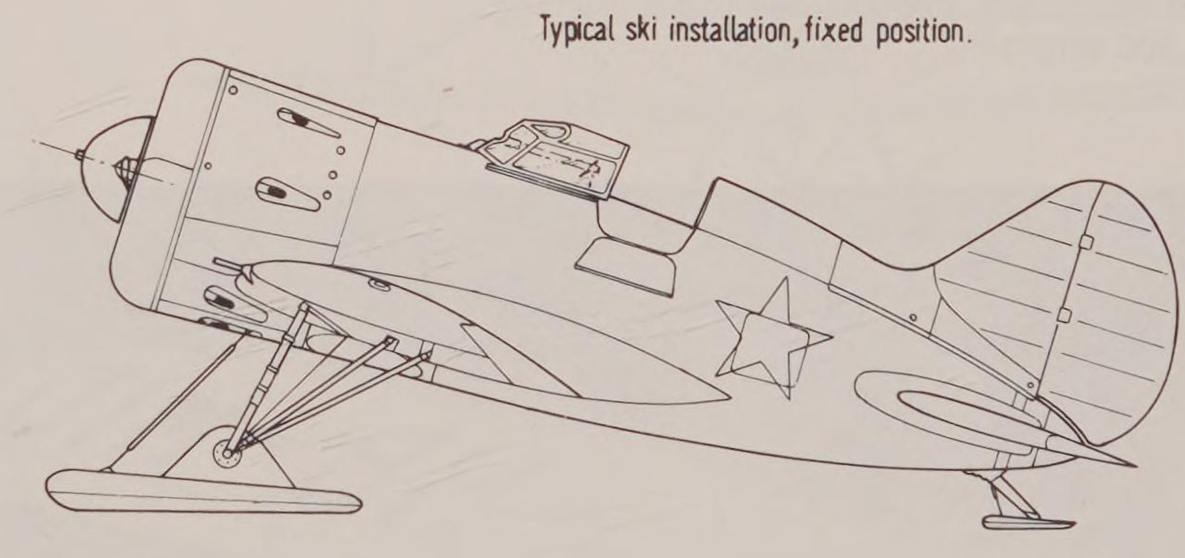


▲
Scrap plan view, Type 24

Scrap view (not to scale) ►
Instrument panel



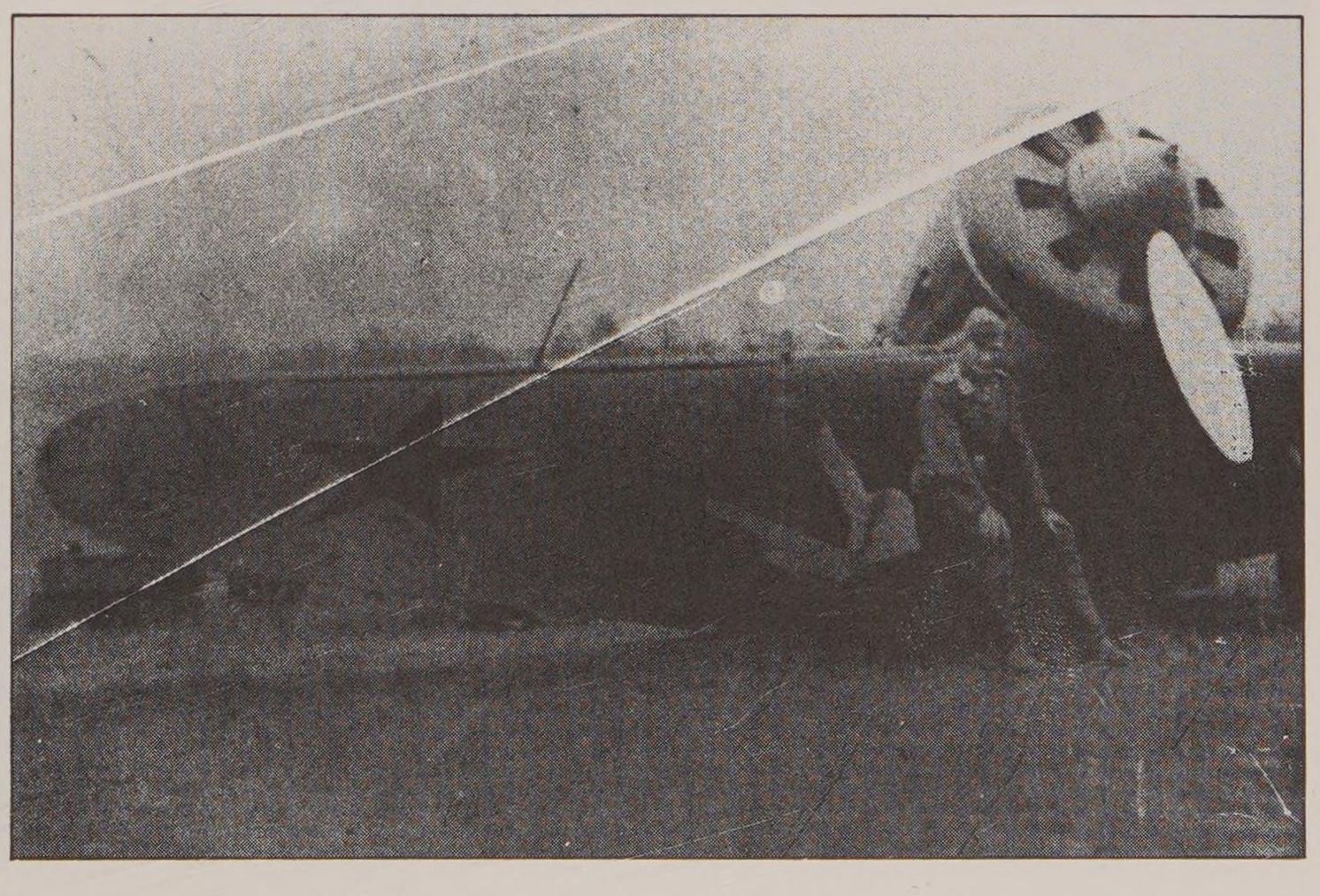
Typical ski installation, fixed position.



▲
Port elevation, Type 5

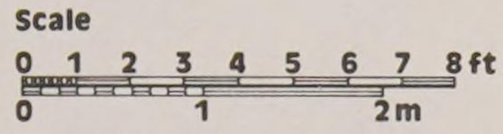
◄ I-16s were in service with the Spanish Air Force well into the 1950s and this photograph shows C.8-25, believed to be the last example on strength.

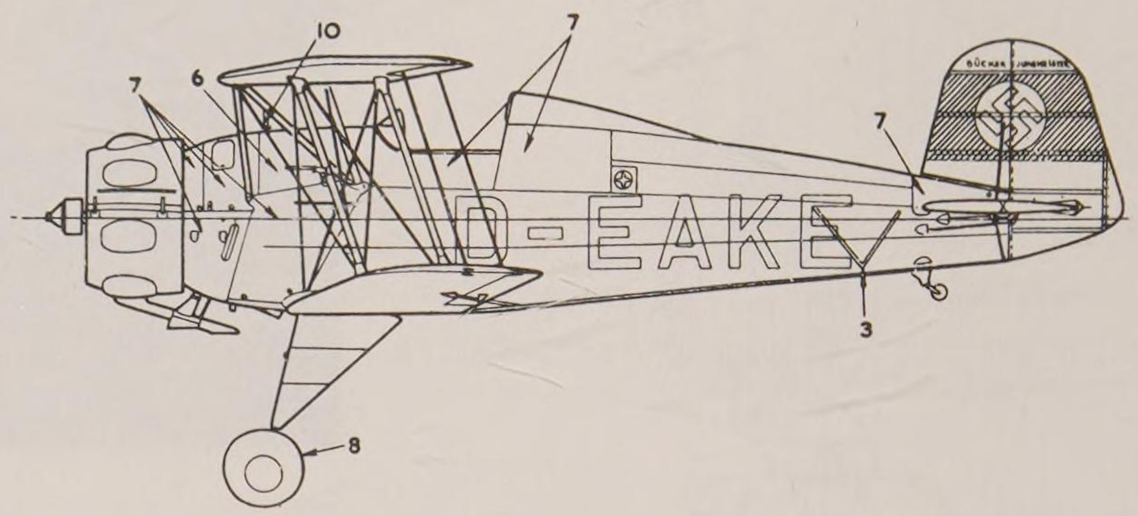
A poor-quality photo of a Soviet I-16 that has come to grief gives an idea of the slotted engine cowling and domed spinner. ►



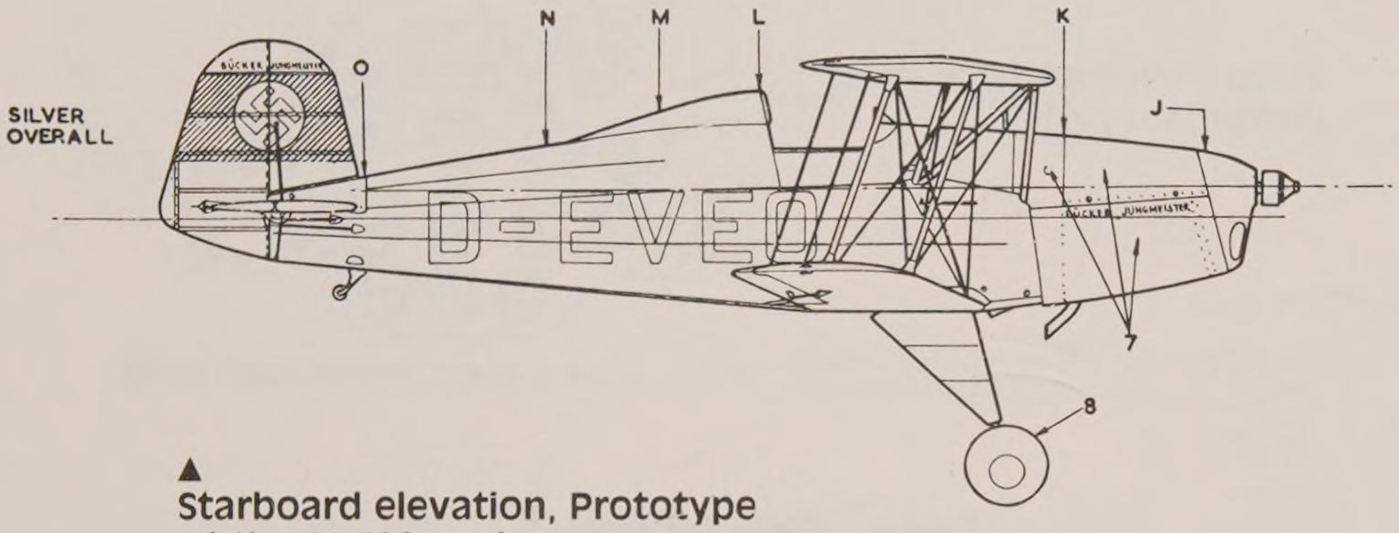
Bücker Bü 133 Jungmeister

Country of origin: Germany.
Type: Single-seat, land-based advanced trainer.
Dimensions: Wing span 21ft 7½in *6.60m*; length 19ft 4in *5.90m*; height 7ft 4½in *2.25m*; wing area 129 sq ft *12.0m²*.
Weights: Empty 926lb *420kg*; loaded 1292lb *586kg*.
Powerplant: One Siemens Sh 14A-4 seven-cylinder radial engine rated at 160hp.
Performance: Maximum speed 134mph *216kph*; initial climb rate 1170ft/min *355m/min*; service ceiling 20,000ft *6100m*; range 310 miles *500km*.
Armament: None.
Service: First flight 1935.





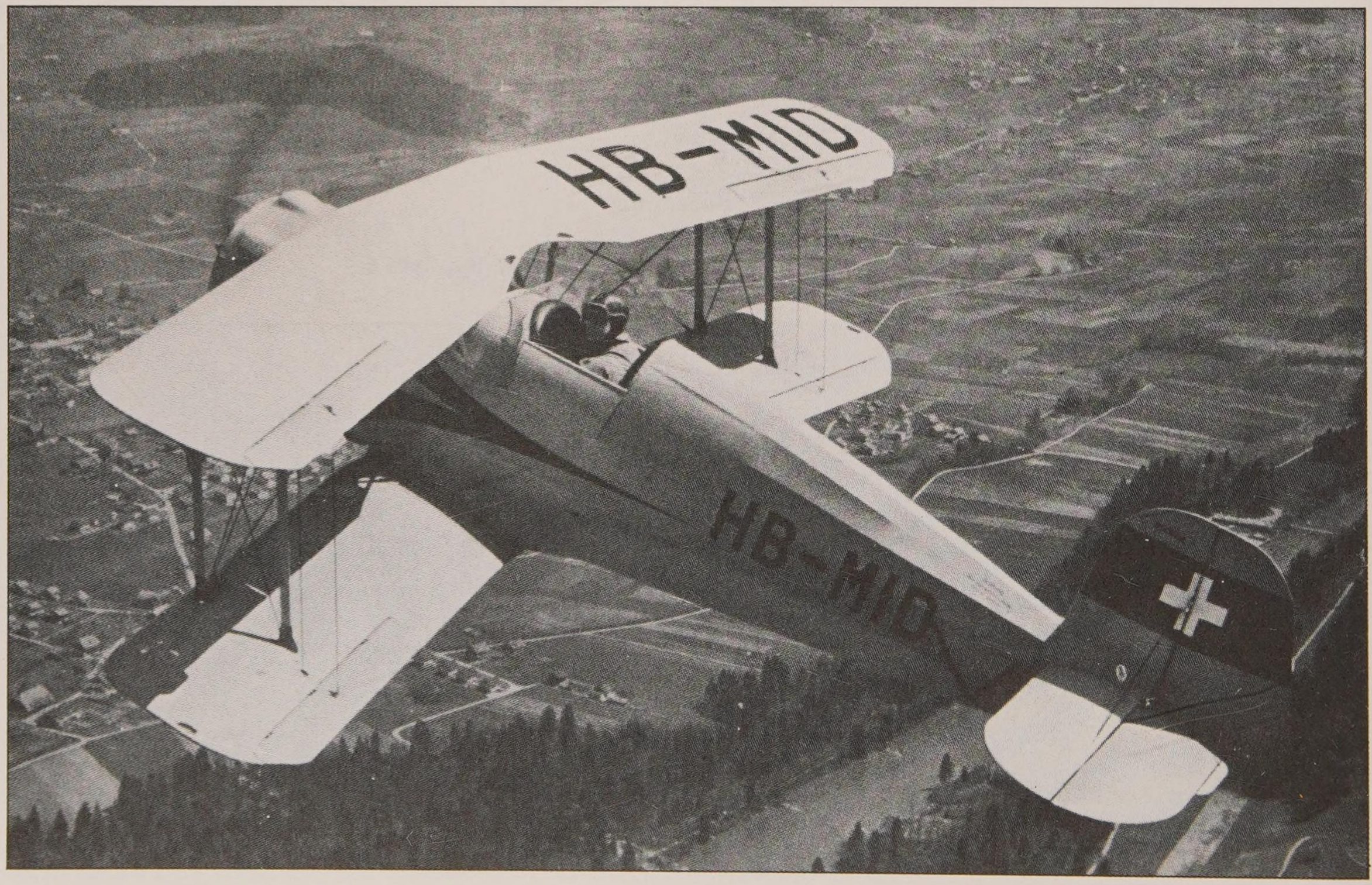
Port elevation, Prototype ►
Sh 14A-4 engine



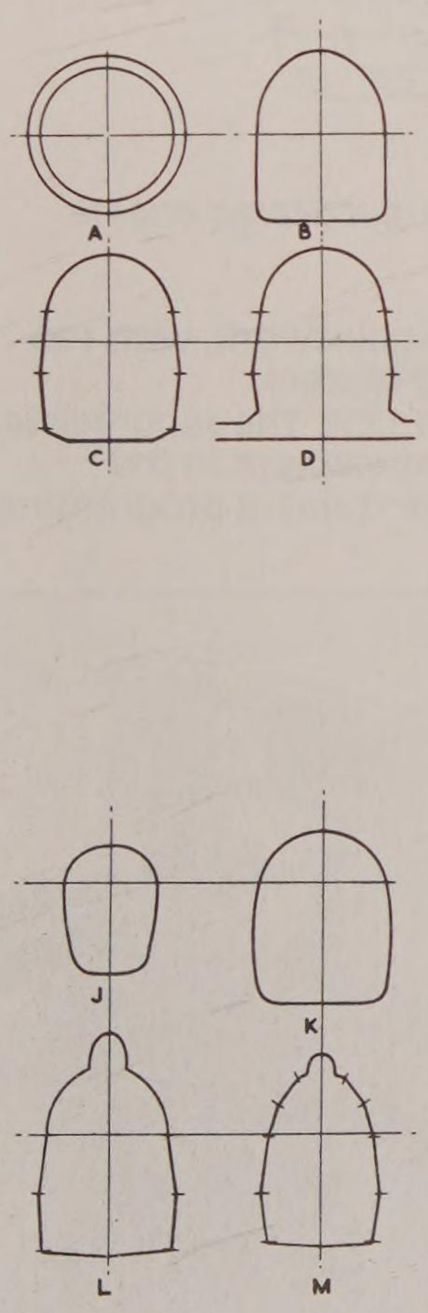
▲
Starboard elevation, Prototype
Hirth HM 506 engine

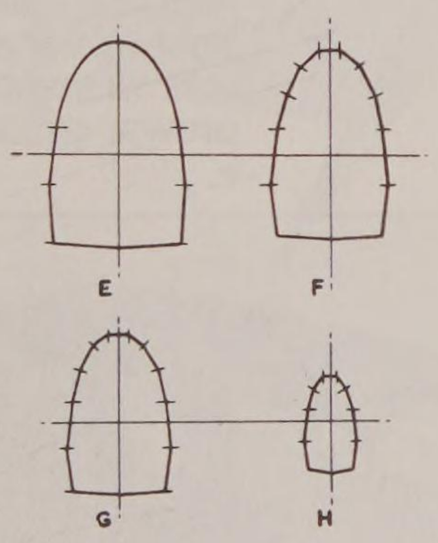
DRAWN BY G A G COX

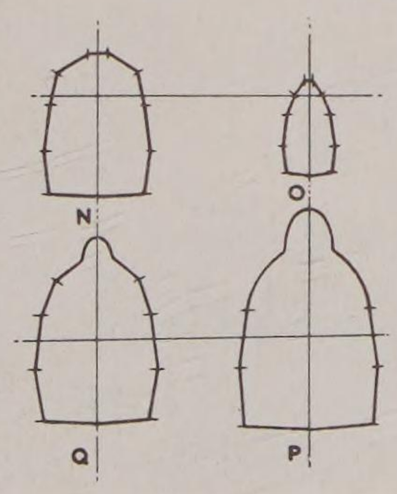
A classic by any standards, the Jungmeister is still a favoured aerobatic aircraft. This one sports a Swiss registration.
▼



▲
Another Swiss-registered Bü 133, built by Dornier in 1940 and one of the subjects of our drawings.

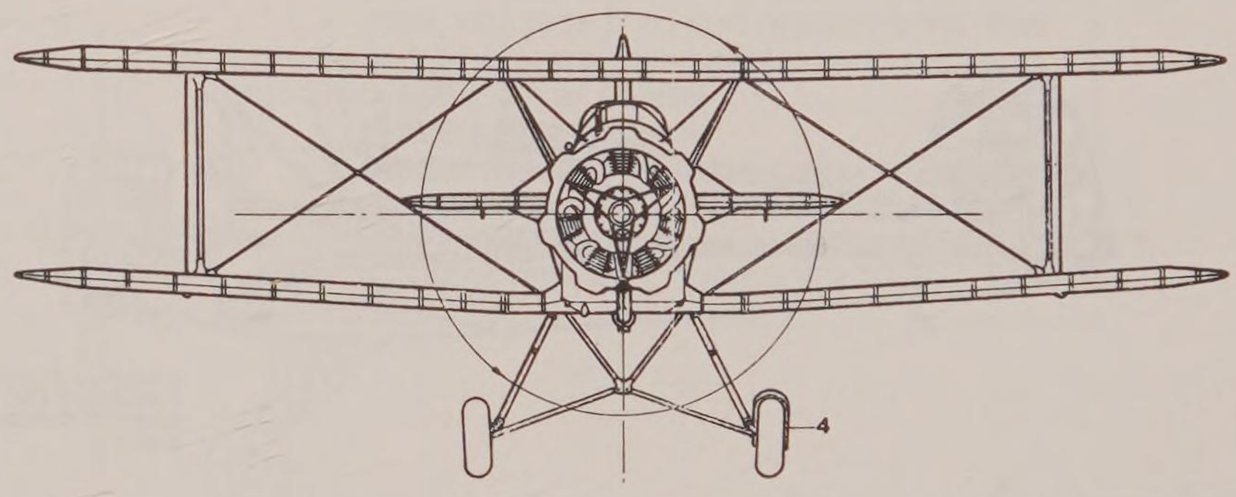


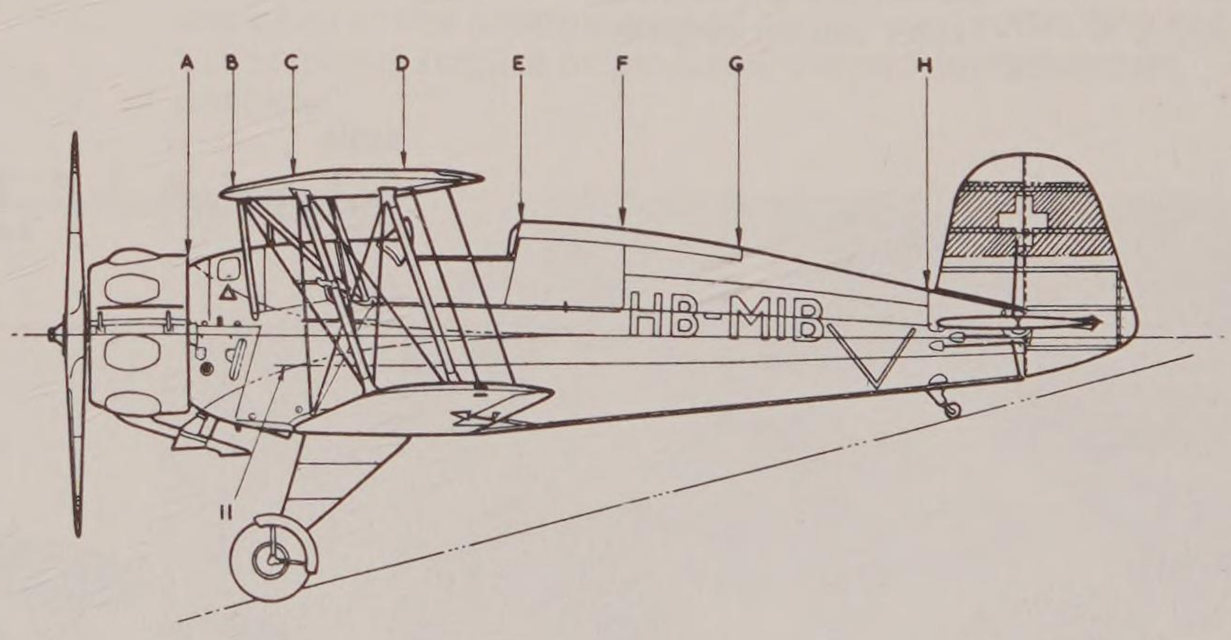




◄ **Fuselage cross-sections**

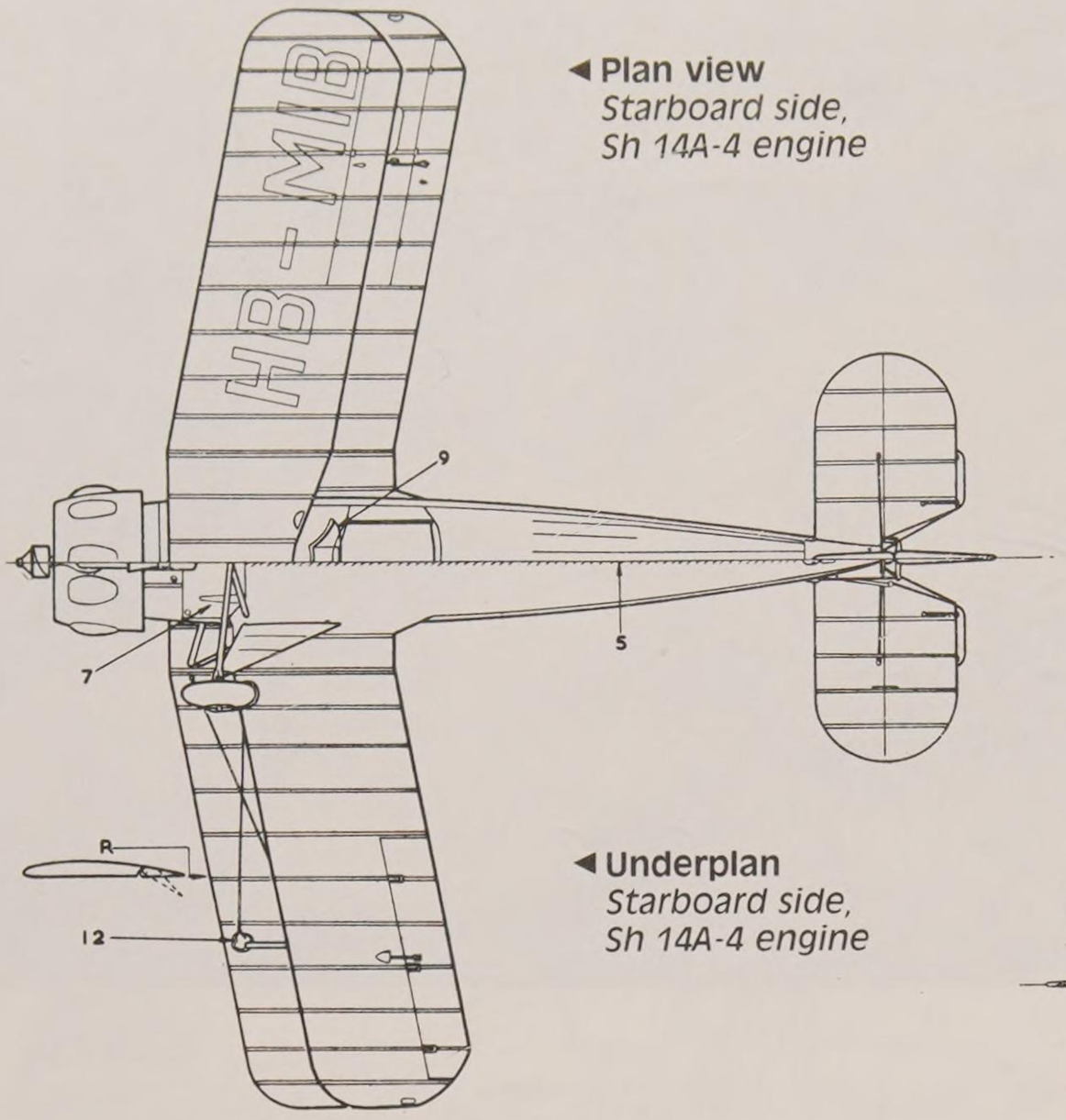
Front elevation ►
Sh 14A-4 engine





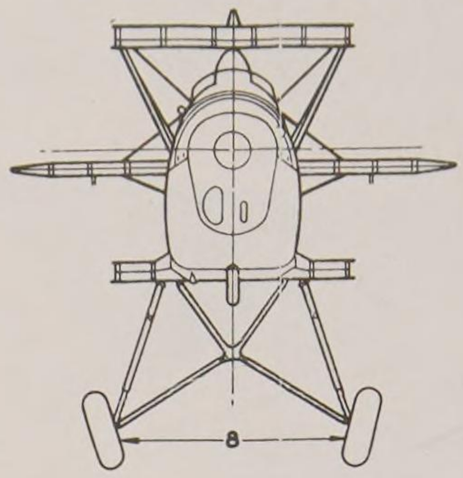
Port elevation ▲
Sh 14A-4 engine

Numerical key
1. This strut port side only. **2.** Black wing walk port side, all aircraft. **3.** Zip fastener on inspection flap. **4.** Mudguards often discarded. **5.** Fabric lacing all along underside. **6.** Petrol tank. **7.** Metal panels. **8.** Undercarriage in offload position. **9.** No framing to this windshield. **10.** Fuel gauge. **11.** Colour lines. **12.** Leather cuffs round interplane strut ends and tailwheel leg. **13.** Leather crashpad. **14.** Venturi tube. **15.** Altimeter. **16.** Clock. **17.** Oil temperature. **18.** Air speed indicator. **19.** Accelerometer. **20.** Engine rpm. **21.** Oil pressure. **22.** Fuel pressure. **23.** Priming pump. **24.** Toe brake pedal.



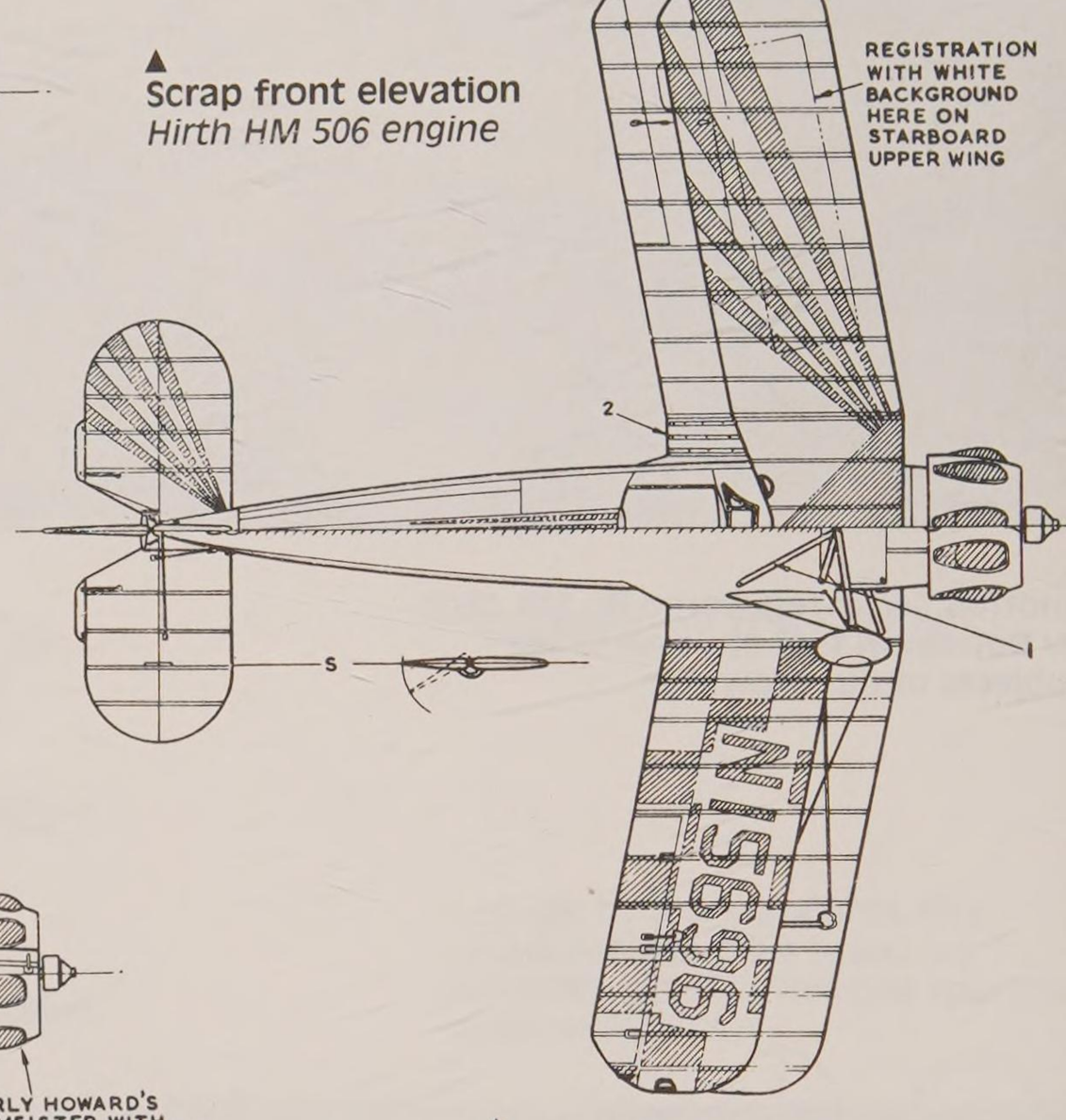
◀ **Plan view**
Starboard side, Sh 14A-4 engine

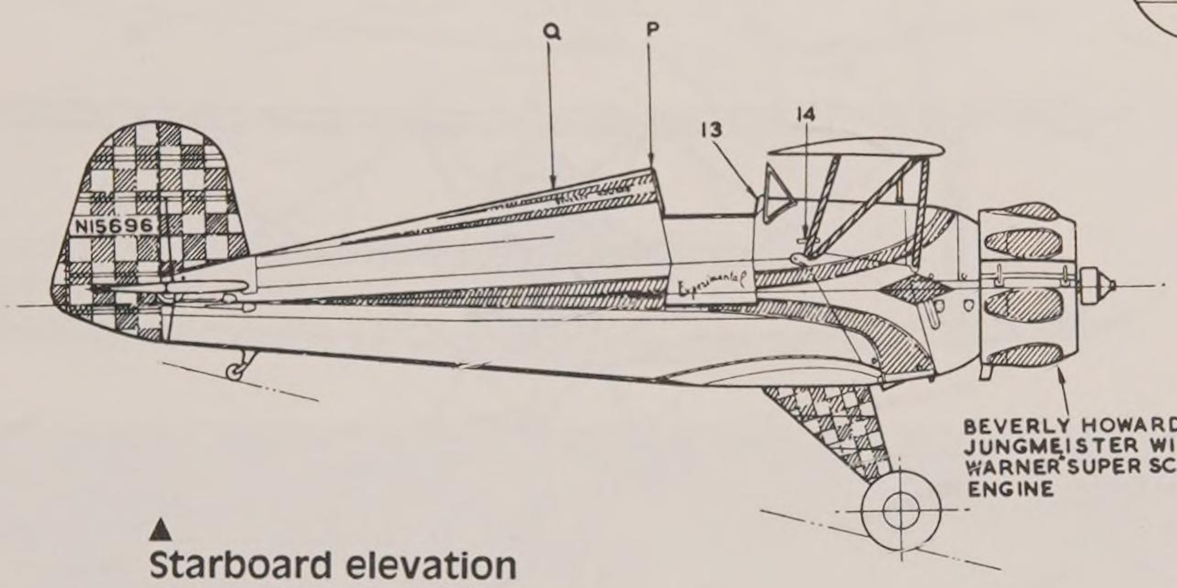
◀ **Underplan**
Starboard side, Sh 14A-4 engine



Plan view
Port side, Super Scarab engine
▼

▲
Scrap front elevation
Hirth HM 506 engine





▲
Starboard elevation
Super Scarab engine

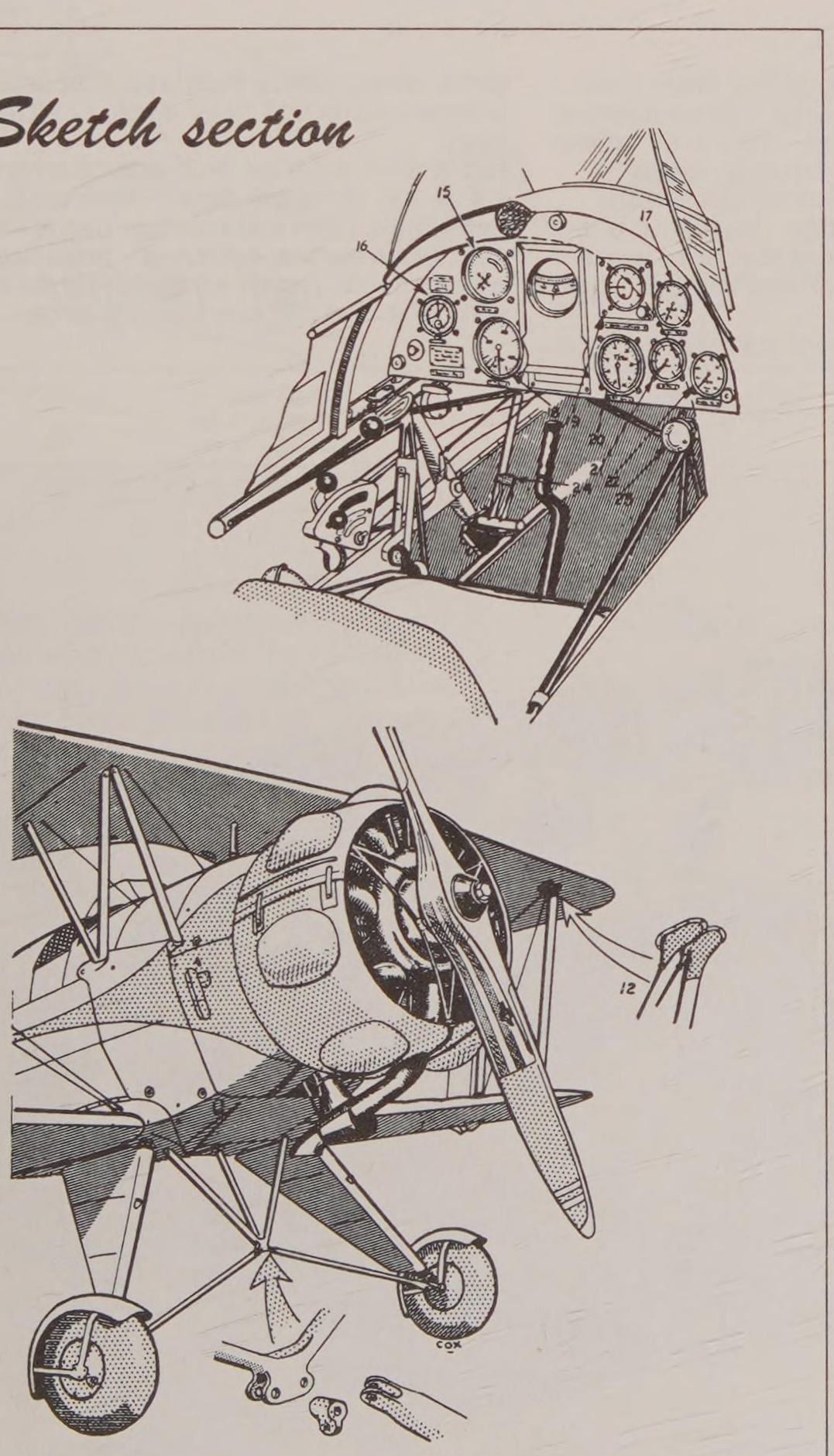
Scale
0 1 2 3 4 5 6 7 8 ft
0 1 2 m

▲
Underplan
Port side, Super Scarab engine

HB-MIC in yellow paintwork, with red trim and cowling blisters, photographed in 1958. The Jungmeister was an important element in the prewar *Luftwaffe* training programme.
▼

▲
Count Cantacuzene's Jungmeister, well-known participant at aerobatic contests in the 1950s. Note rudder extension.

Sketch section

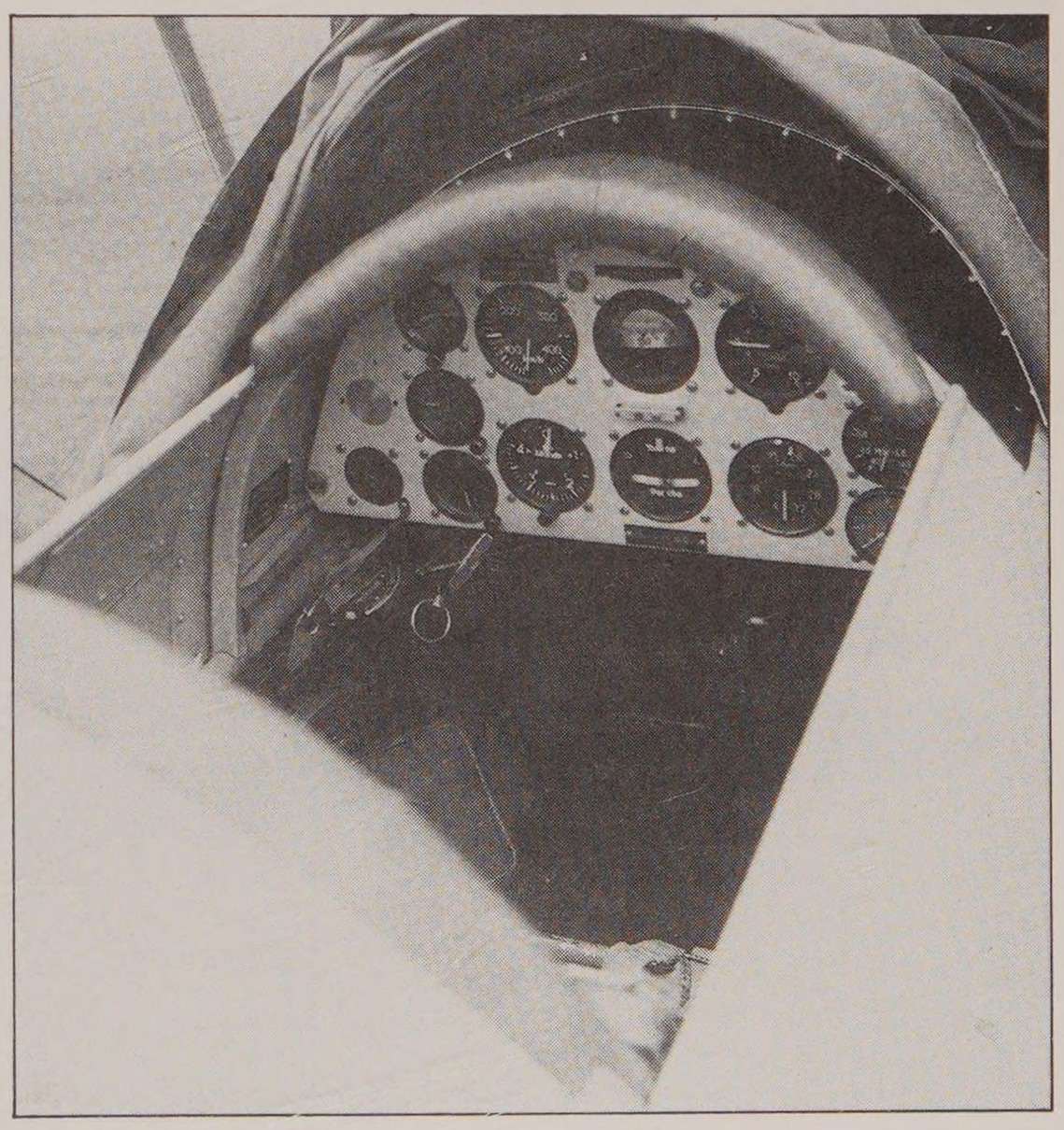


Colour notes

HB-MIB: Entire aircraft cream except for red cowl, fuselage trim and registrations. Red and white national rudder markings.
D-EAKE: Silver overall.
D-EVEO: Silver overall.
N15696 (Beverly Howard's aircraft): Entire aircraft white except for shaded areas (red); thin white then dark blue outline to fuselage markings. Handholds black.

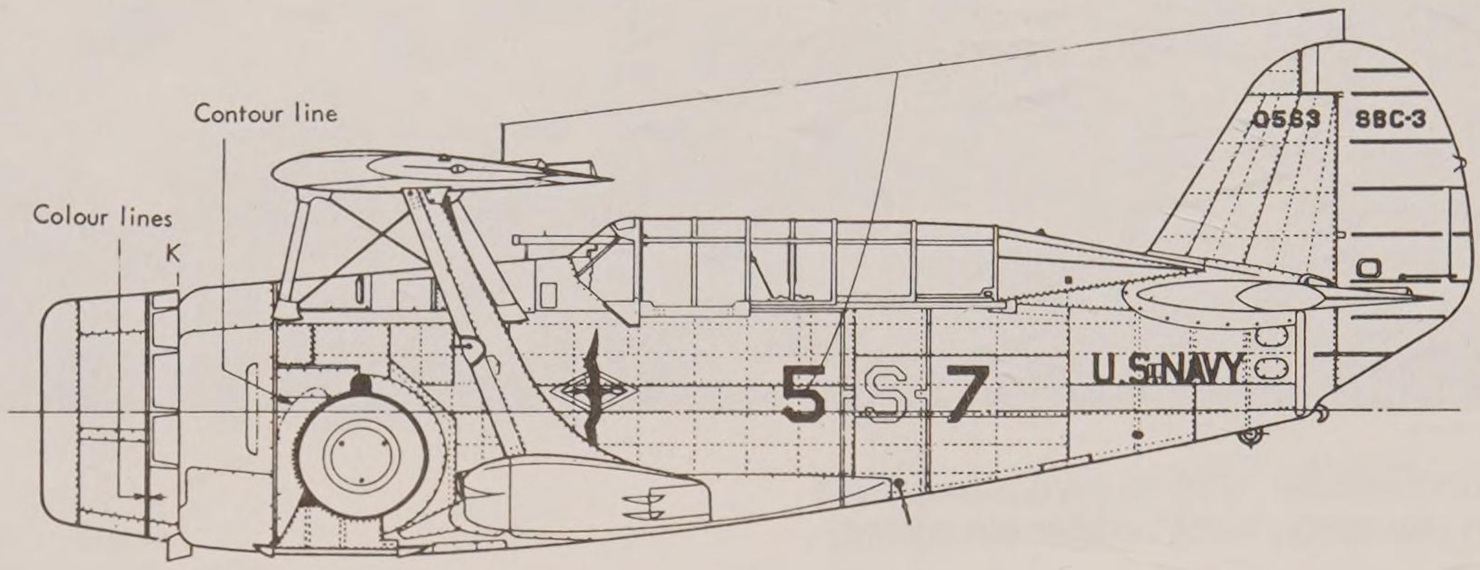
Bü 133 instrument panel, considerably different from that depicted in the accompanying sketch and reflecting the 'customised' nature of privately owned Jungmeisters postwar.

▼



Curtiss SBC-3 and -4 Helldiver

Country of origin: USA.
Type: Two-seat, carrier-based scout bomber.
Dimensions: Wing span 34ft 0in *10.36m*; length 27ft 5in *8.36m*; height 10ft 3½in *3.14m*; wing area 317 sq ft *29.45m²*.
Weights: Empty 4166lb *1889kg*, (-4) 4841lb *2195kg*; loaded 5581lb *2531kg*, (-4) 7632lb *3461kg*.
Powerplant: One Pratt & Whitney R-1535-94 Twin Wasp radial engine rated at 825hp, (-4) Wright R-1820-34 Cyclone rated at 950hp.
Performance: (-4) Maximum speed 235mph *378kph*; initial climb rate 1450ft/min *440m/min*; service ceiling 24,500ft *7470m*; range 610 miles *982km*.
Armament: One fixed 0.3in or 0.5in Colt machine gun and one flexibly mounted 0.3in machine gun, plus one 500lb *227kg* or (-4) 1000lb *454kg* bomb beneath fuselage and one 100lb *45kg* bomb under each wing.
Service: First flight (XSBC-1) January 1934, (XSBC-3) March 1936; service entry (SBC-3) July 1937, (-4) 1938.

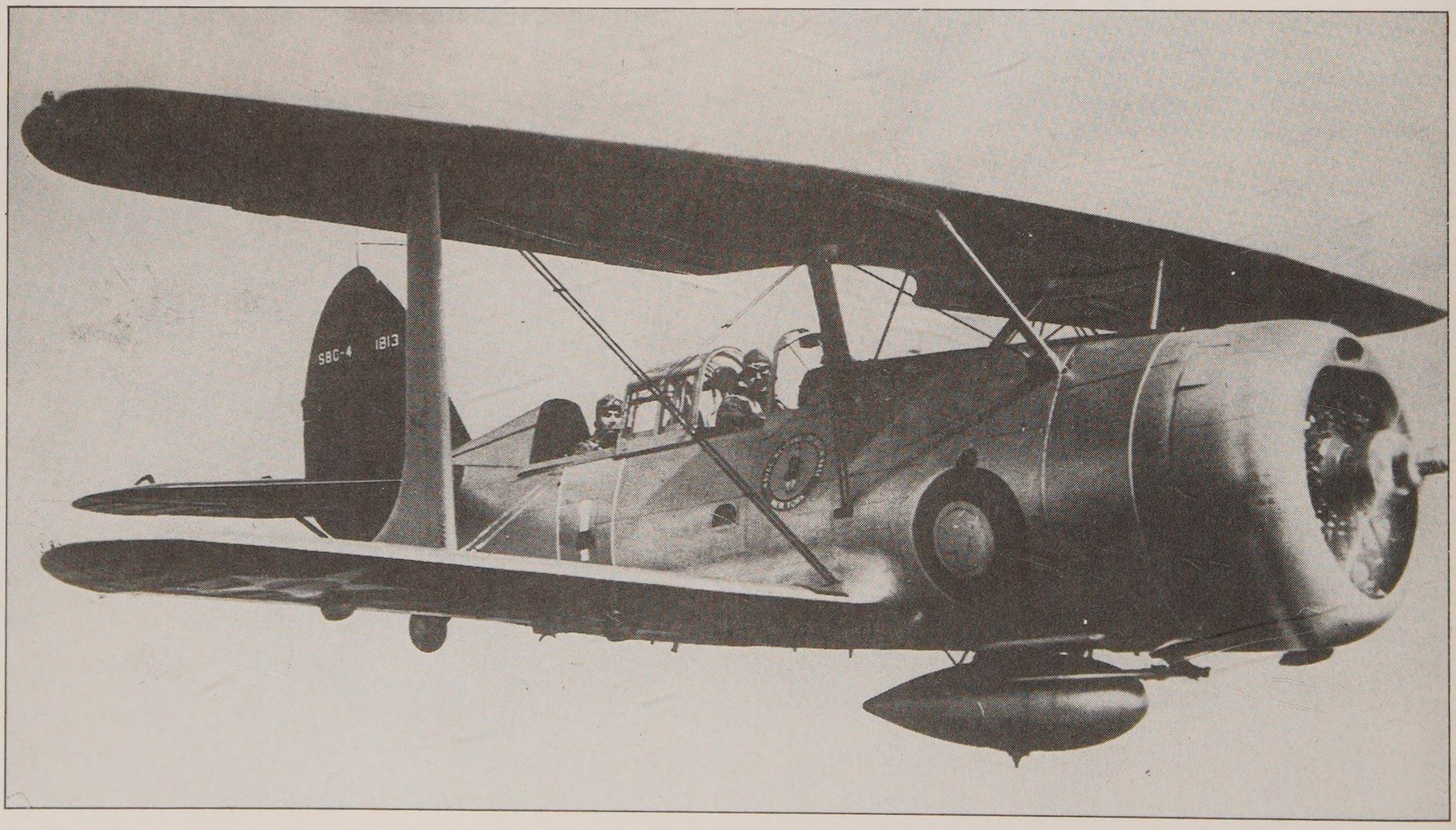


▲ Port elevation, SBC-3

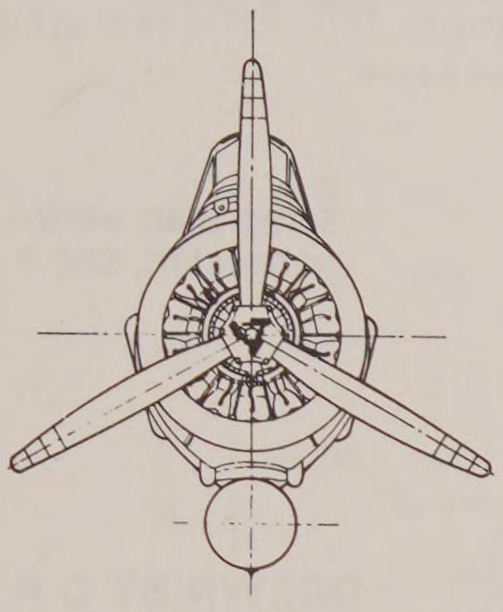
The SBC was the last front-line military biplane to be produced in the USA, and was in service when war broke out in the Pacific. This is an SBC-4, powered by a 950hp Wright Cyclone.
▼

Colour notes

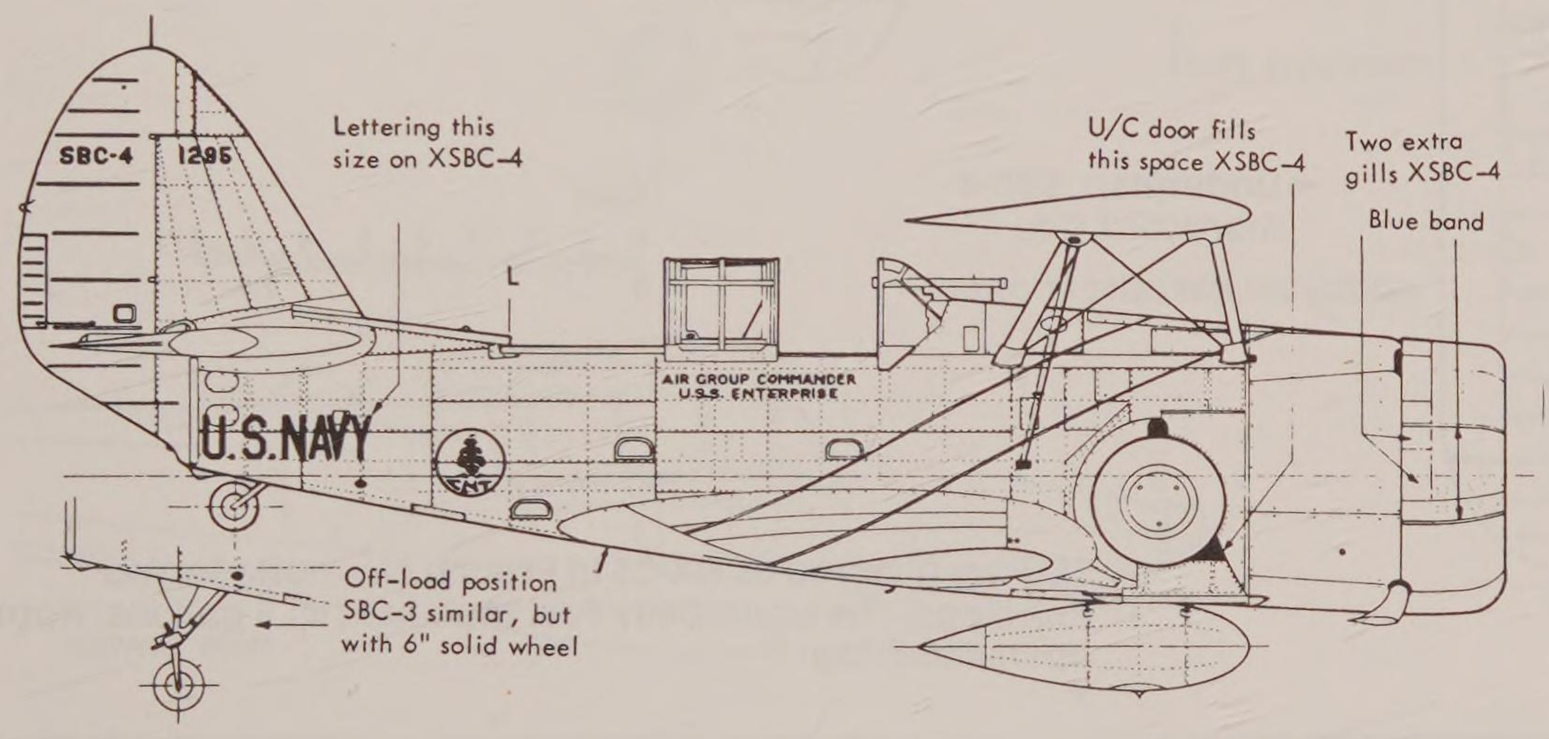
SBC-3: Tail surfaces, excluding fillets – red. Top surface of upper wing – chrome yellow. All other metal surfaces – light grey. Lower wings – silver. Engine cowling, wing chevron and fuselage band – blue with white border. VS-5 badge – black man o' war bird with red throat; red border to white diamond. White 'S', hyphens and tail lettering.
XSBC-4: Serial 0582. From station 'B' aft – as SBC-4 except where indicated. Colour – all polished metal and silver dope, all lettering black.
SBC-4: Basic fuselage and wing colours as SBC-3. Tail, including fillets – blue (USS *Enterprise*). Cowl and fuselage bands – blue with white outline. Lettering – black (except white on tail). Carrier emblem – white disc with blue ship and surrounding circle.



Close-in air-to-air view of an SBC-4, showing to advantage the streamlined centre-section strut fairings and retracted port main wheel. The immense width of the aircraft's ailerons is also apparent. ►



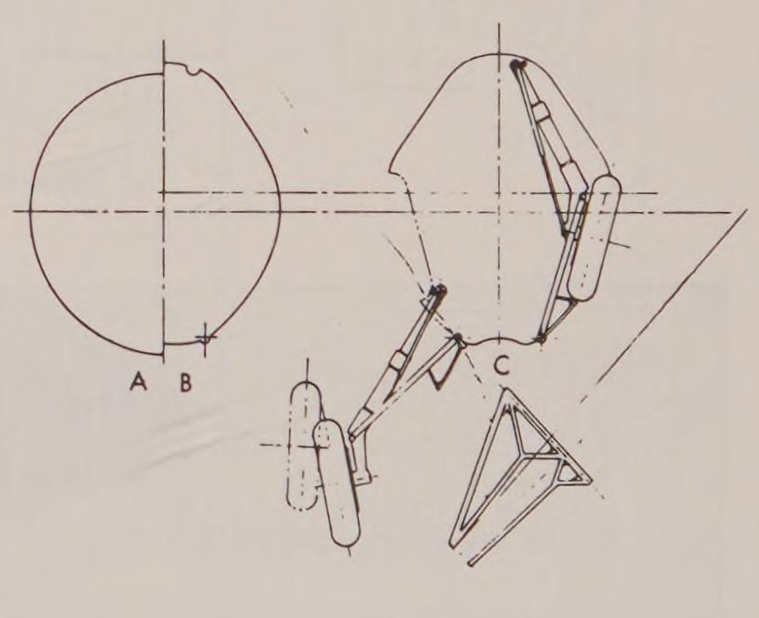
▲
Scrap front elevation, SBC-3
Twin Wasp installation



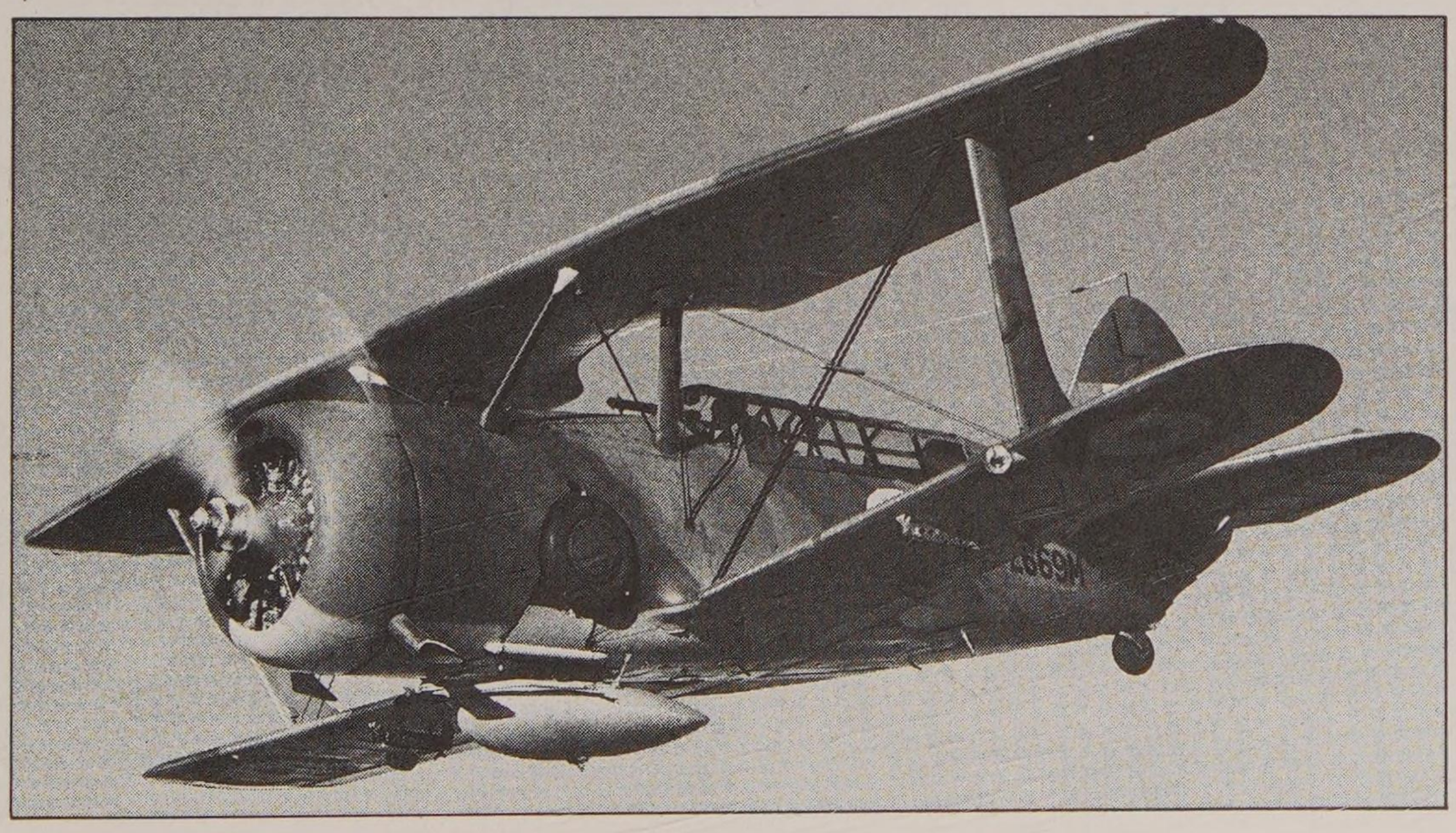
▲
Starboard elevation, SBC-4

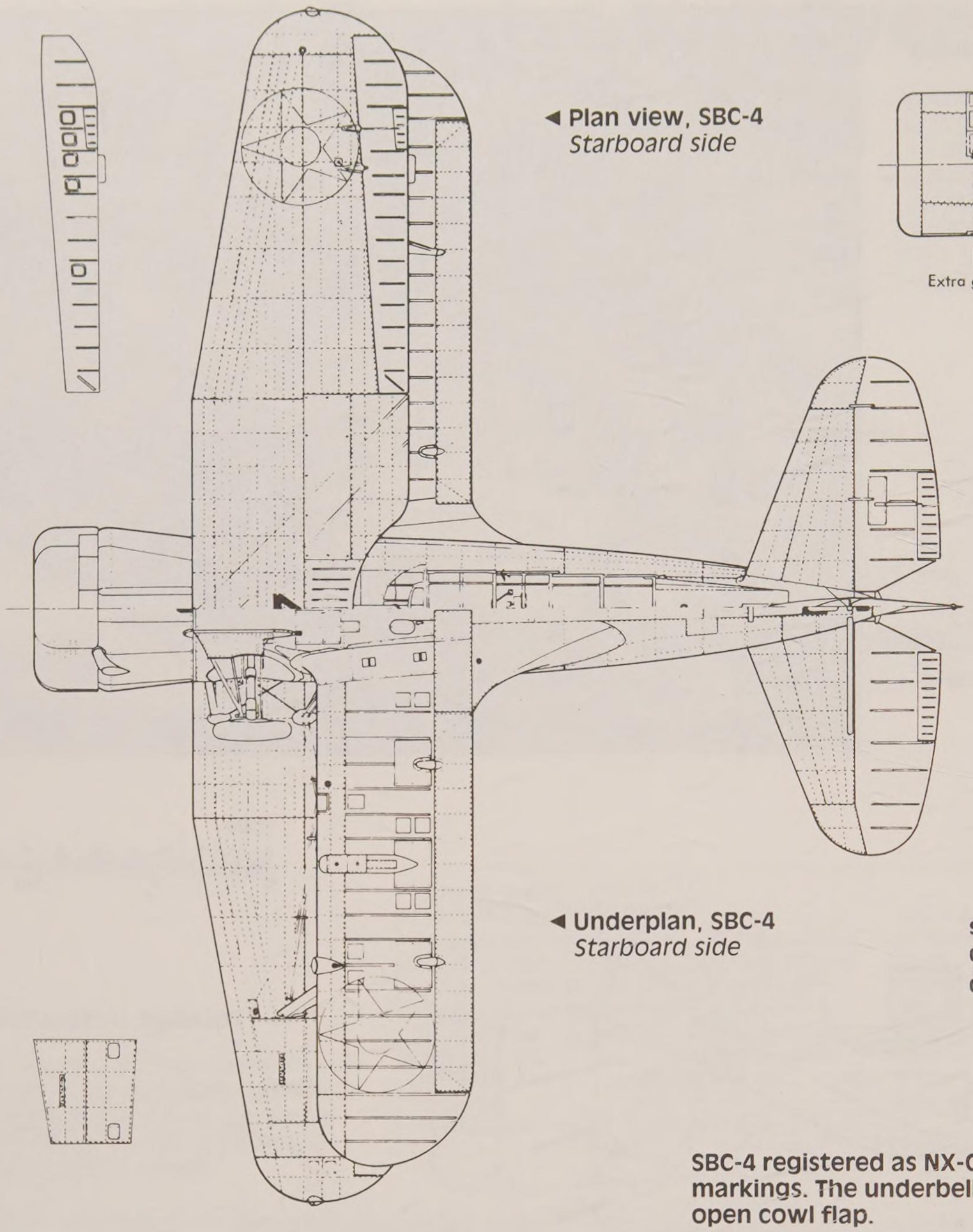
Scale
0 1 2 3 4 5 6 7 8 ft
0 1 2 m

Fuselage cross-sections
▼

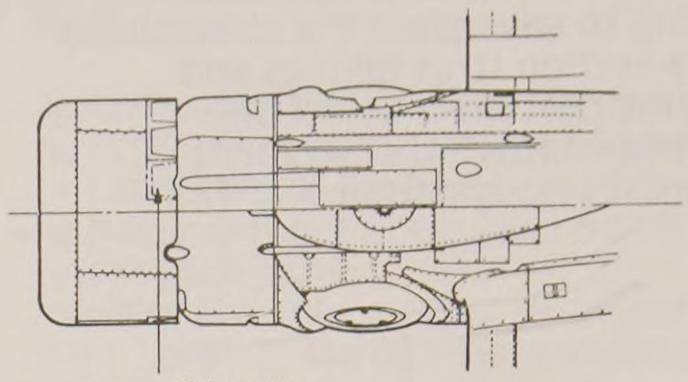


A number of SBC-4s on order for France were diverted to the RAF, where they were dubbed Clevelands. This one has a ground instructional serial number.
▼





◀ **Plan view, SBC-4**
Starboard side



▲
Scrap plan view/ underplan, SBC-3

◀ **Underplan, SBC-4**
Starboard side

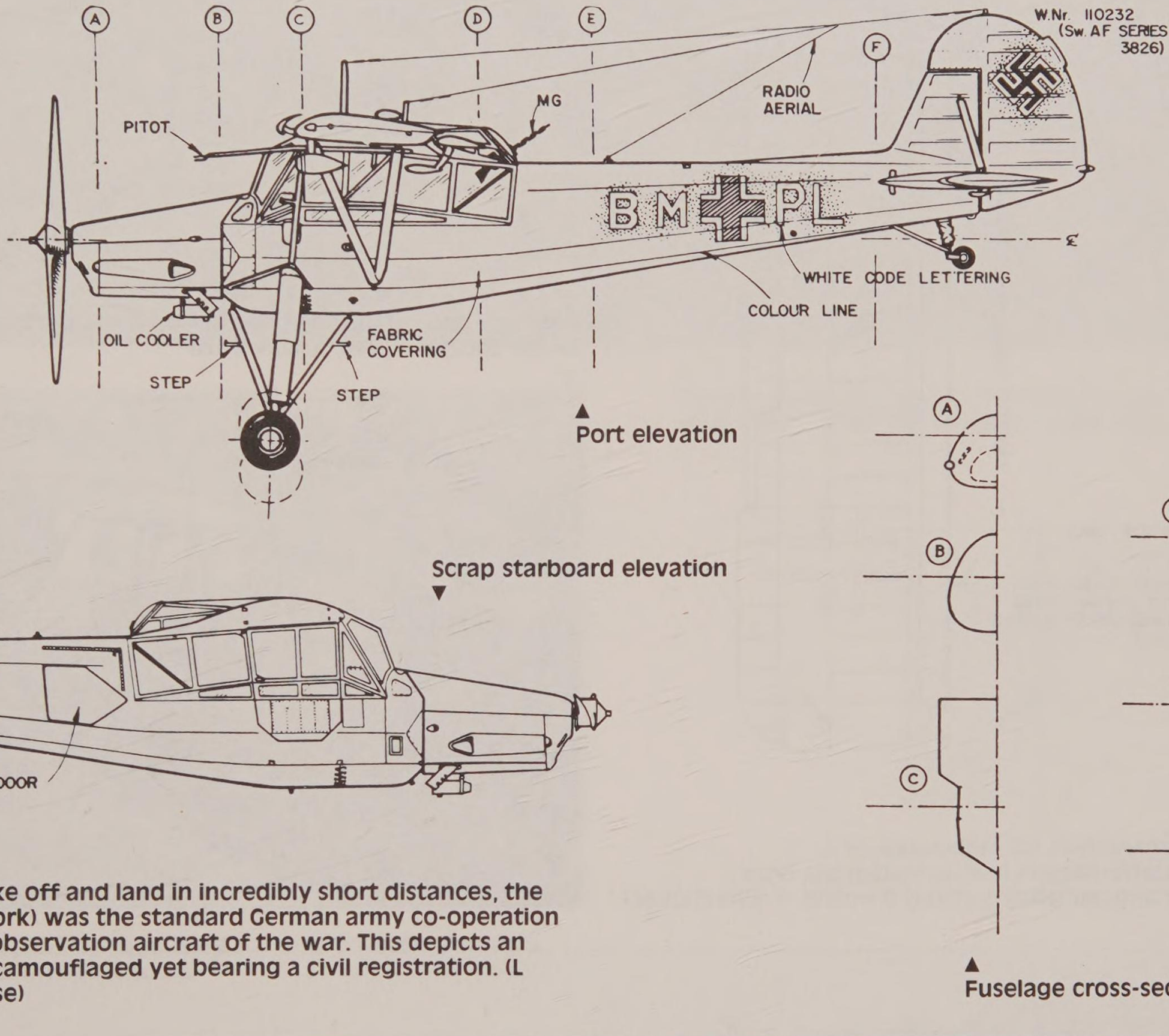
Scale
0 1 2 3 4 5 6 7 8 ft
0 1 2 m

DRAWN BY G A G COX

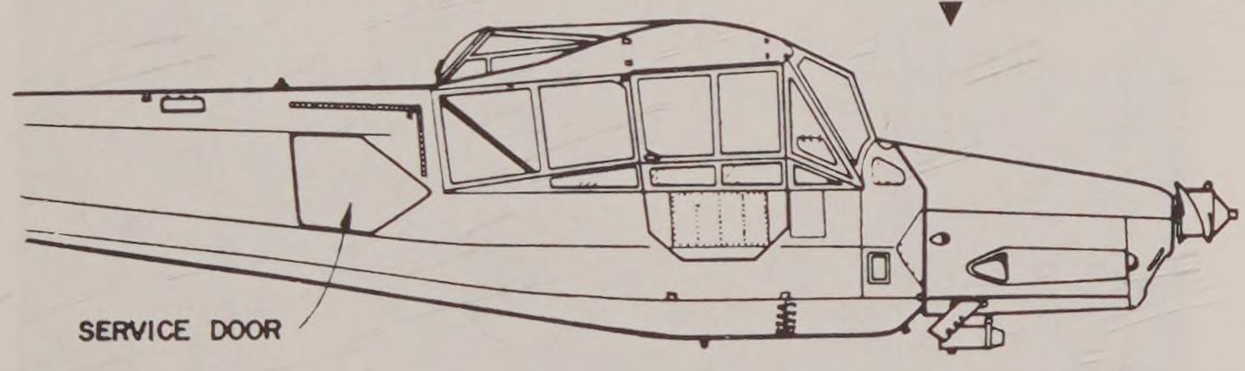
SBC-4 registered as NX-C5 in French camouflage and markings. The underbelly fuel tank held 41.5 gallons. Note open cowl flap.
▼

Fieseler Fi 156C Storch

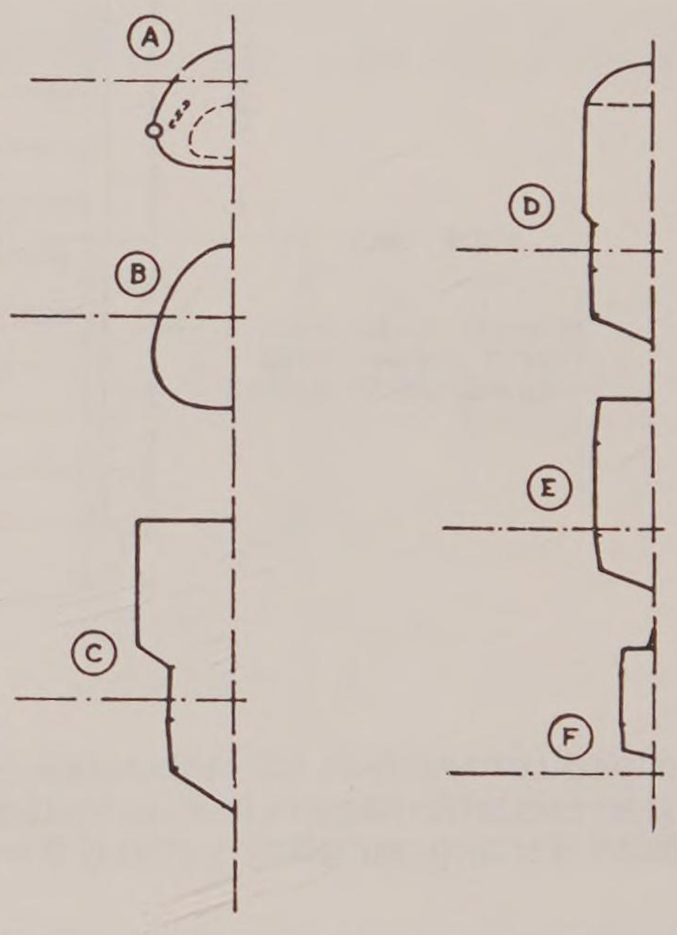
Country of origin: Germany.
Type: Three-seat, land-based communications, army co-operation and general-purpose aircraft.
Dimensions: Wing span 46ft 9in *14.25m*; length 32ft 6in *9.91m*; height 10ft 0in *3.05m*; wing area 279.9 sq ft *26.0m²*.
Weights: Empty 2051lb *930kg*; loaded 2924lb *1326kg*.
Powerplant: One Argus As 10C eight-cylinder, inverted-vee, air-cooled engine rated at 240hp.
Performance: Maximum speed 109mph *175kph* at sea level; time to 3000ft *915m*, 4min; service ceiling 16,700ft *5090m*; range 630 miles *1015km*.
Armament: One flexibly mounted 7.9mm MG 15 machine gun.
Service: First flight (V1) spring 1936; service entry (C-1) early 1939, (C-3) late 1940.



▲ Port elevation

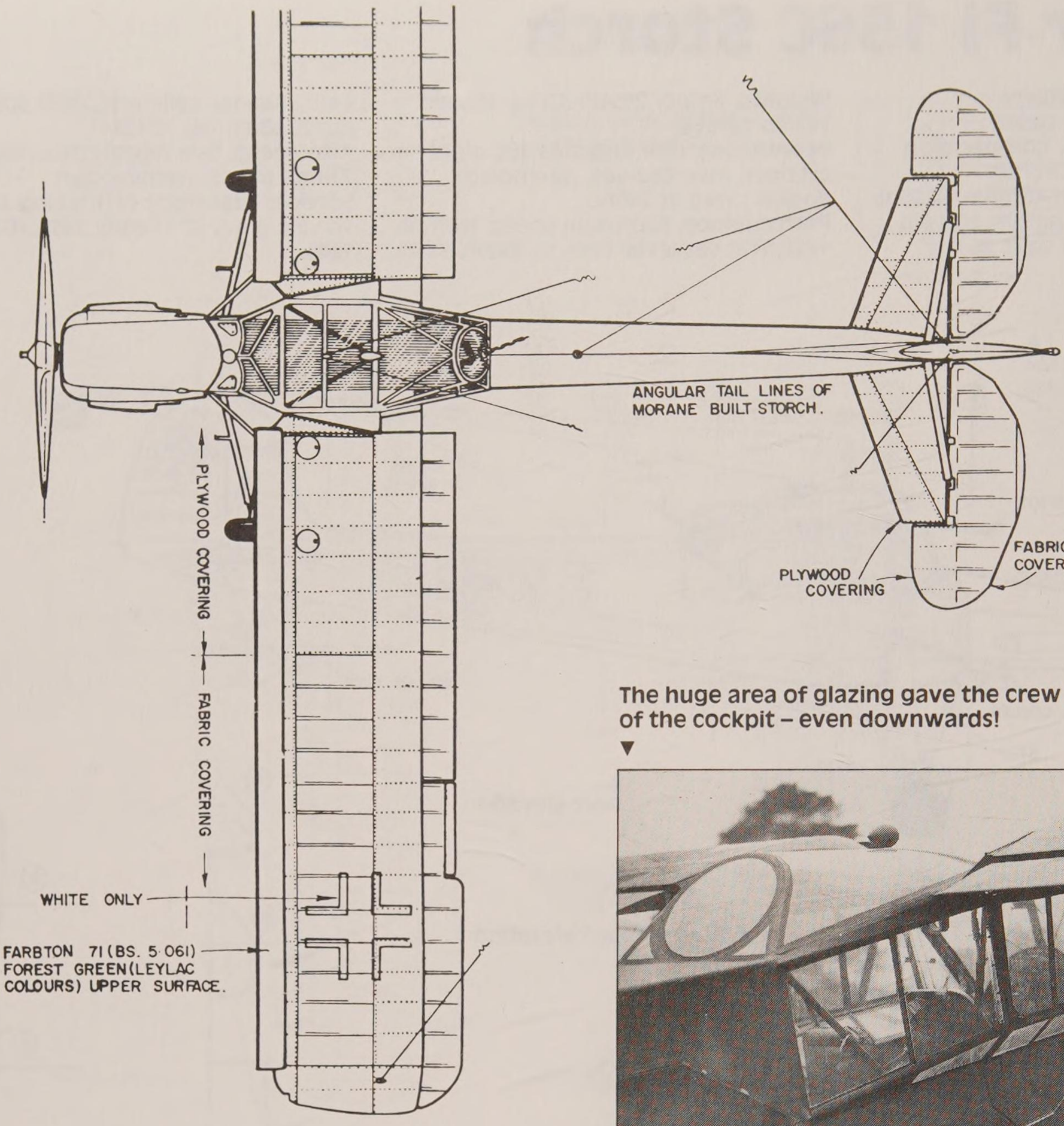


Scrap starboard elevation ▼

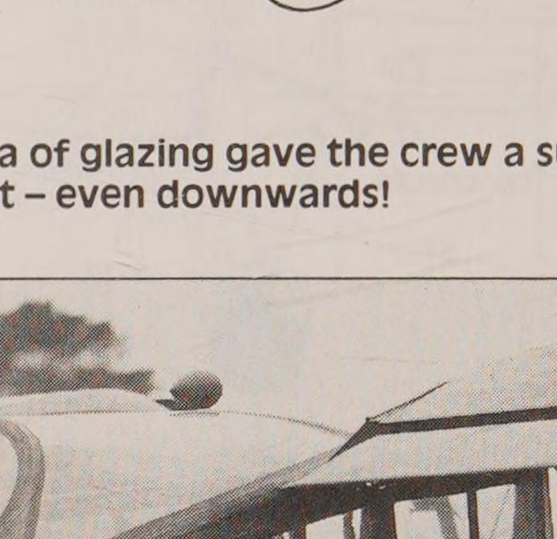


▲ Fuselage cross-sections

Able to take off and land in incredibly short distances, the Storch (Stork) was the standard German army co-operation and light observation aircraft of the war. This depicts an early C-1, camouflaged yet bearing a civil registration. (L Whitehouse) ▼

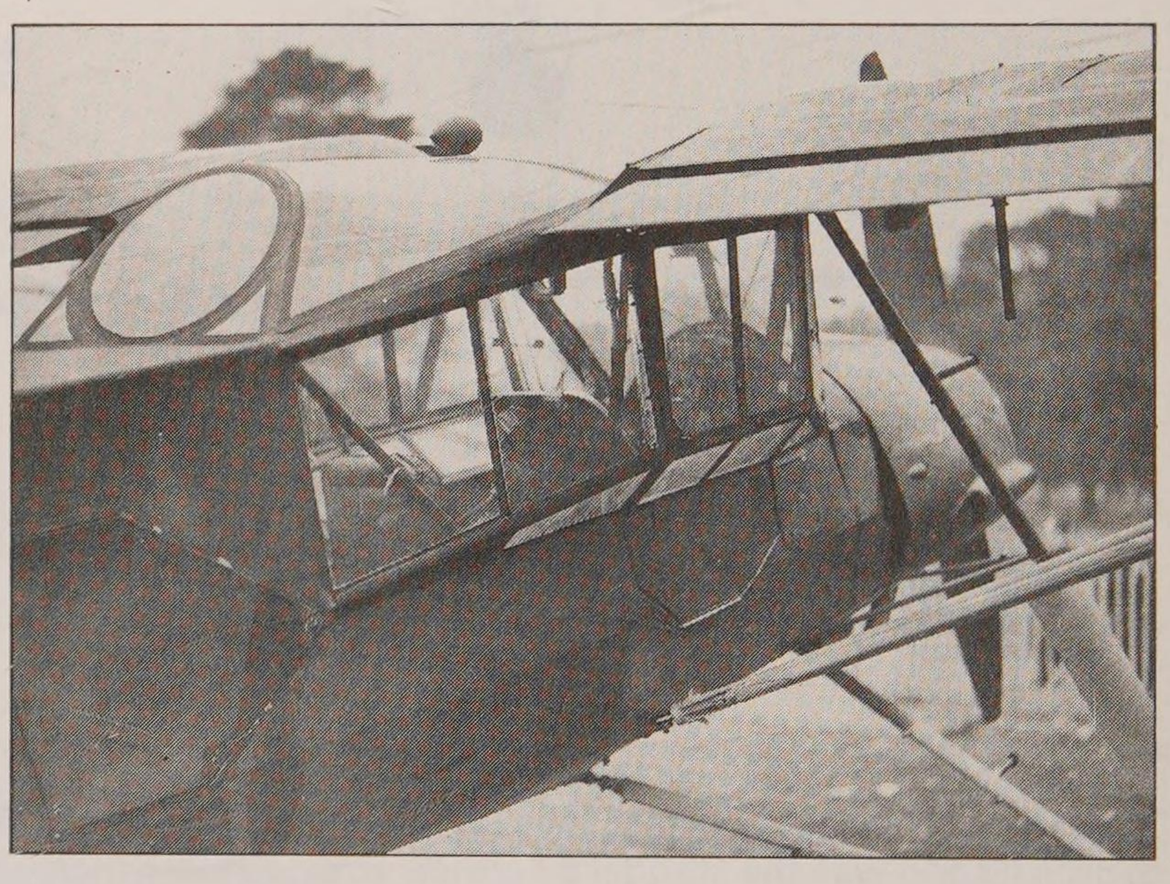


▲ Plan view



The huge area of glazing gave the crew a superb view out of the cockpit – even downwards!

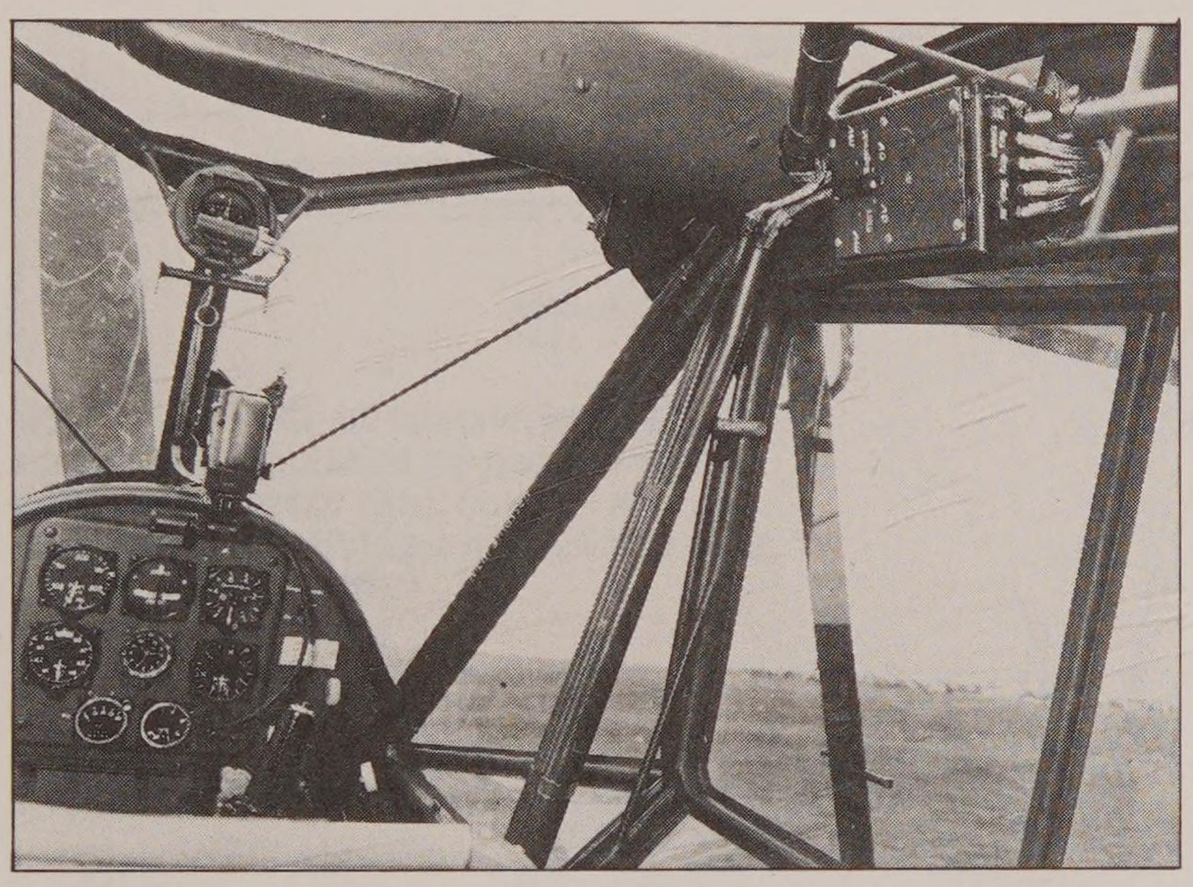
▼



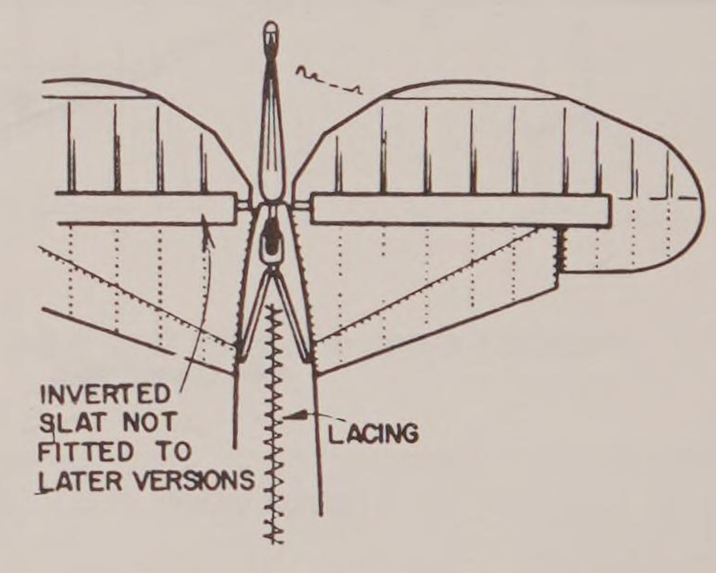
Damaged *Luftwaffe* Fi 156 ambulance of a *Wüstennotstaffel* (Desert Rescue Squadron); note additional triangular glazing of this D model. (L Whitehouse)

▼

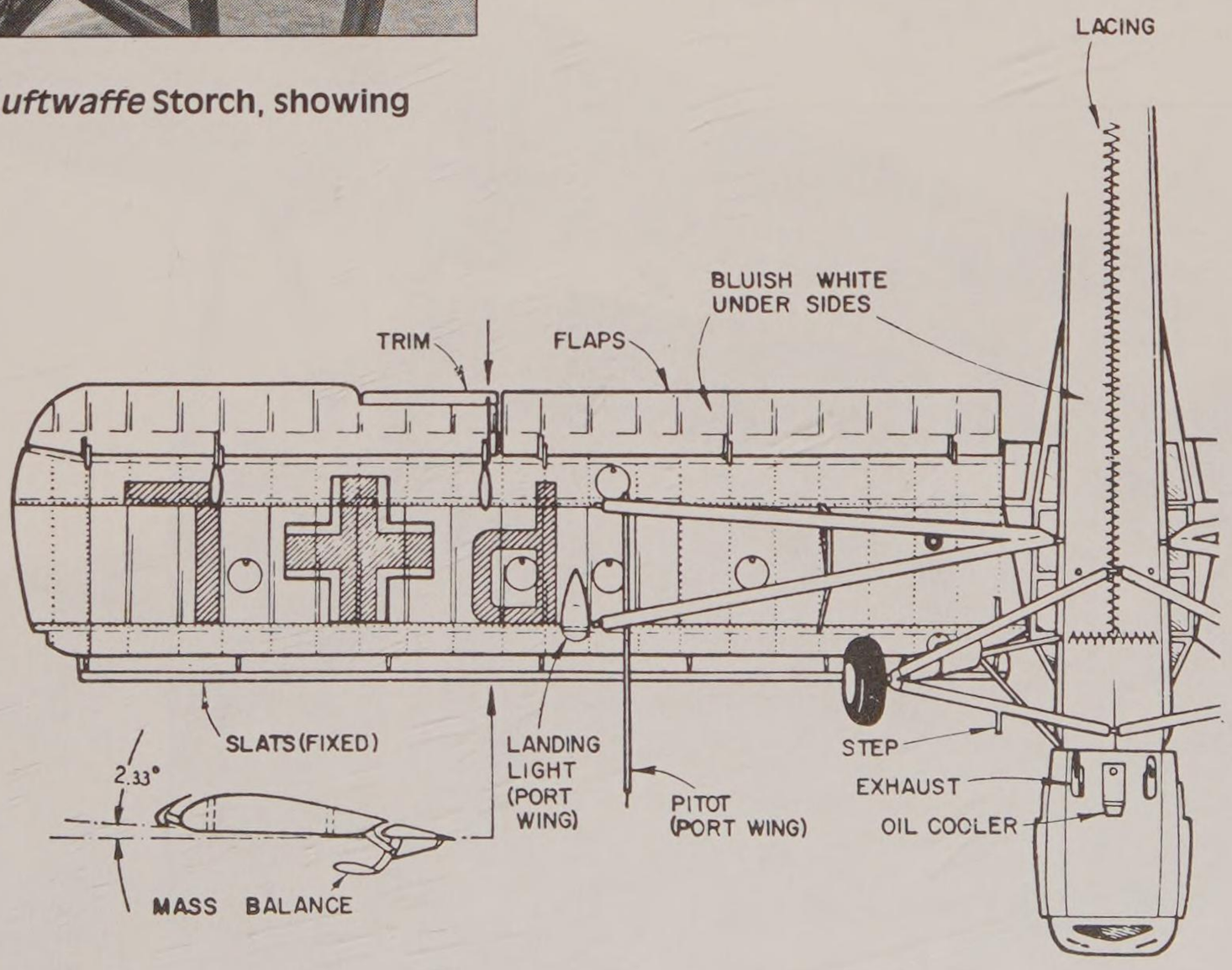
▲
Storchs were produced in France as the MS.500 'Criquet' series; here an MS.502 fuselage awaits restoration work.



▲
Front cockpit detail of a WWII *Luftwaffe* Storch, showing compact instrument panel.



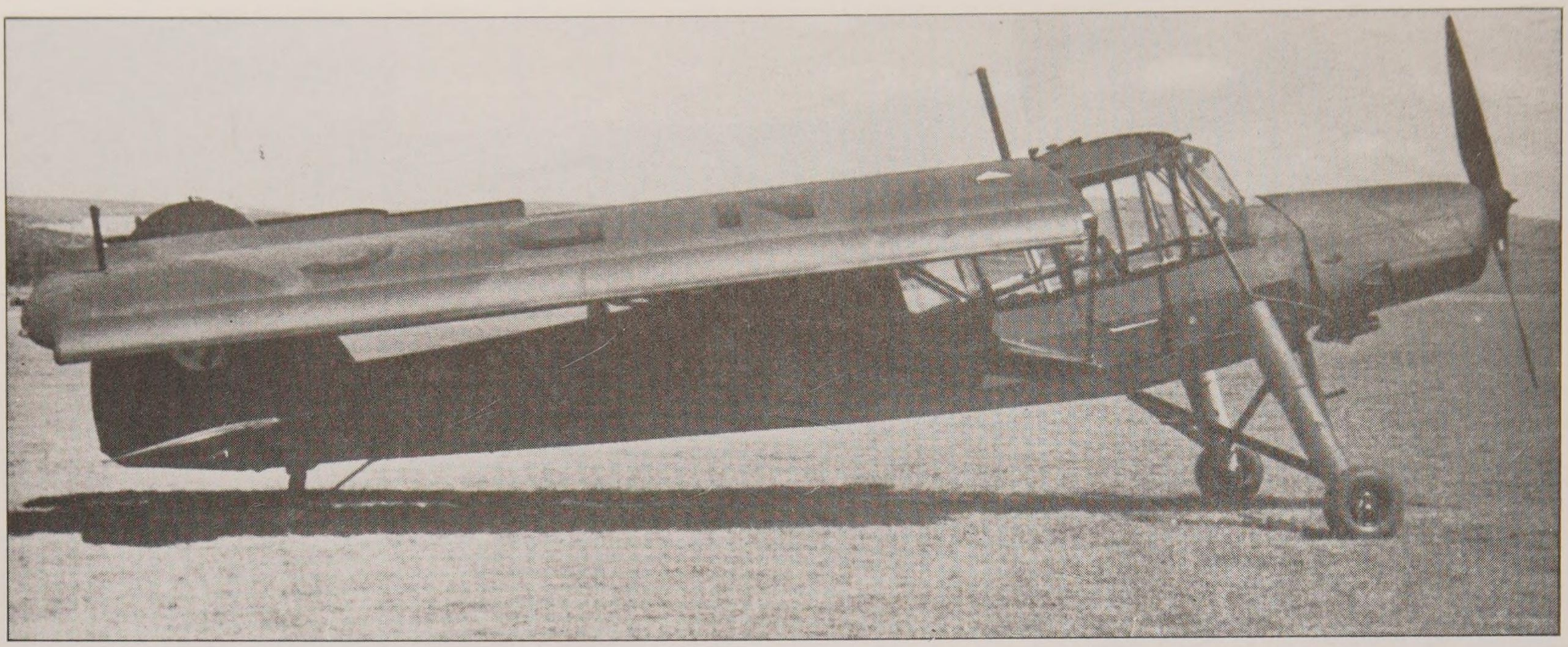
Scrap underplan ►



Scale

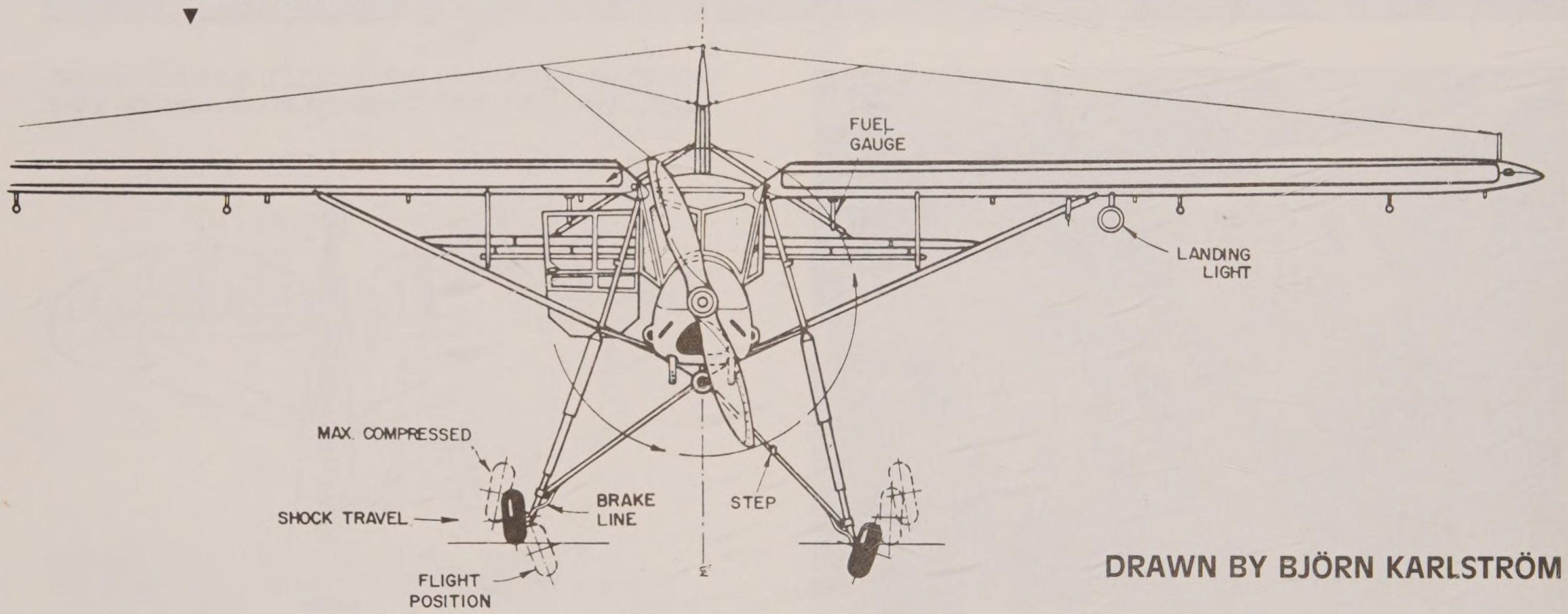
0 1 2 3 4 5 6 7 8 ft

0 1 2 m



▲
Fi 156C D-INBC again, here with wings folded back. Entire leading edge of wing was occupied by slots. (L Whitehouse)

Front elevation
▼



DRAWN BY BJÖRN KARLSTRÖM

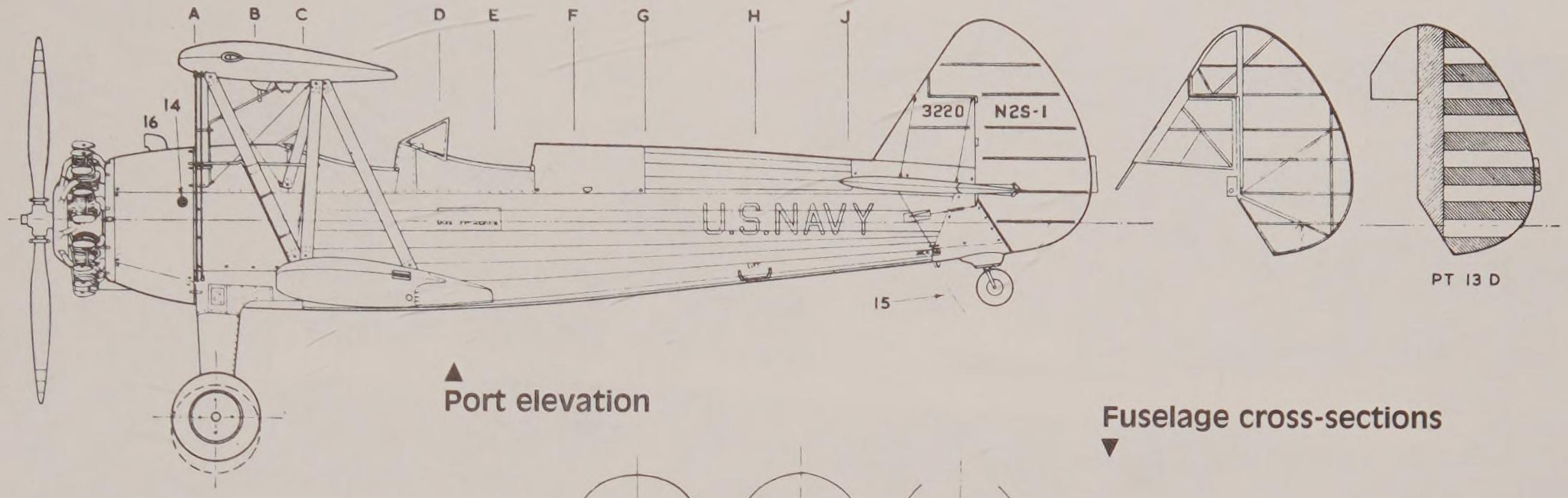
◄ VD+TD was one of several Storchs captured by the British and is seen here in the UK daubed as Air Ministry No 99. (IWM B6199)

Boeing-Stearman PT-13–18 Kaydet

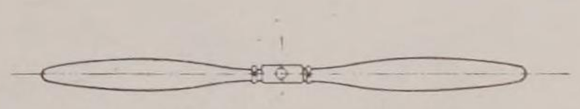
Country of origin: USA.
Type: Two-seat, land-based primary trainer.
Dimensions: Wing span 32ft 2in *9.80m*; length 25ft 0¼in *7.63m*; height 9ft 2in *2.79m*; wing area 297.4 sq ft *27.63m²*.

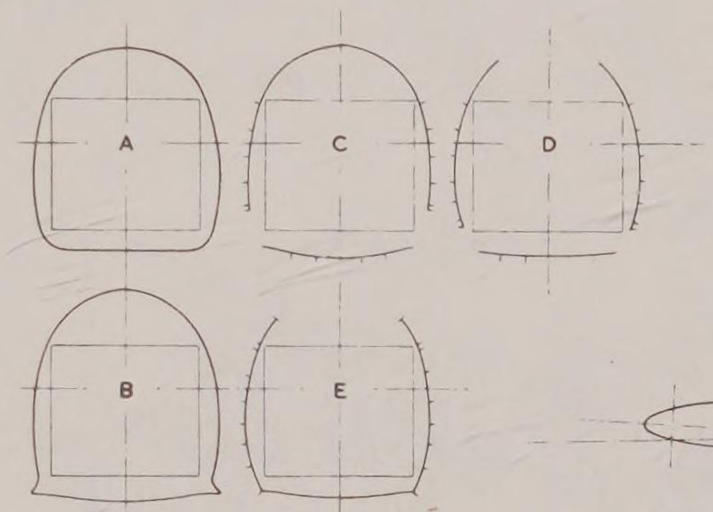
Weights: Empty 1936lb *878kg*; loaded 2717lb *1232kg*.
Powerplant: One Lycoming R-680 radial engine rated at 220hp, (PT-17) Continental R-670 rated at 220hp, (PT-18) Jacobs R-755 rated at 225hp.

Performance: Maximum speed 124mph *200kph*; initial climb rate 840ft/min *256m/min*; service ceiling 11,200ft *3400m*; range 505 miles *813km*.
Armament: None.
Service: First flight: (PT-13) 1936.

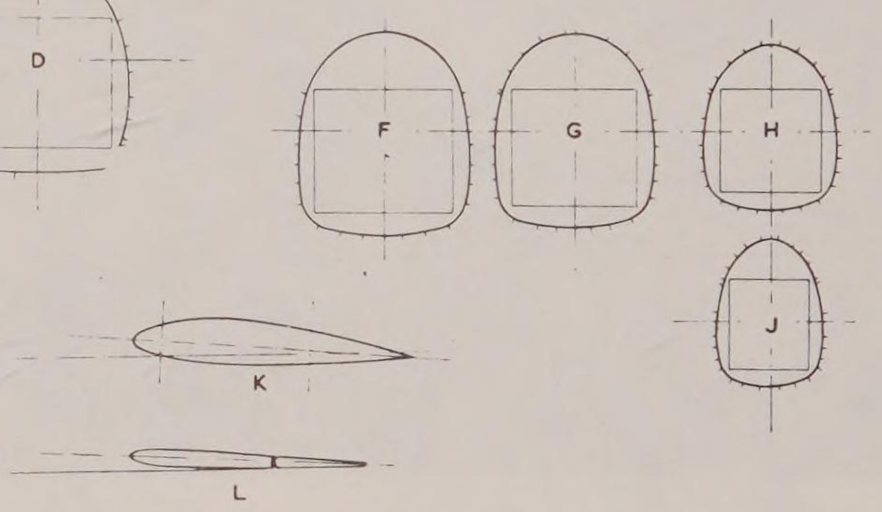


▲
Port elevation





Fuselage cross-sections
▼



▲
Wing and tailplane cross-sections

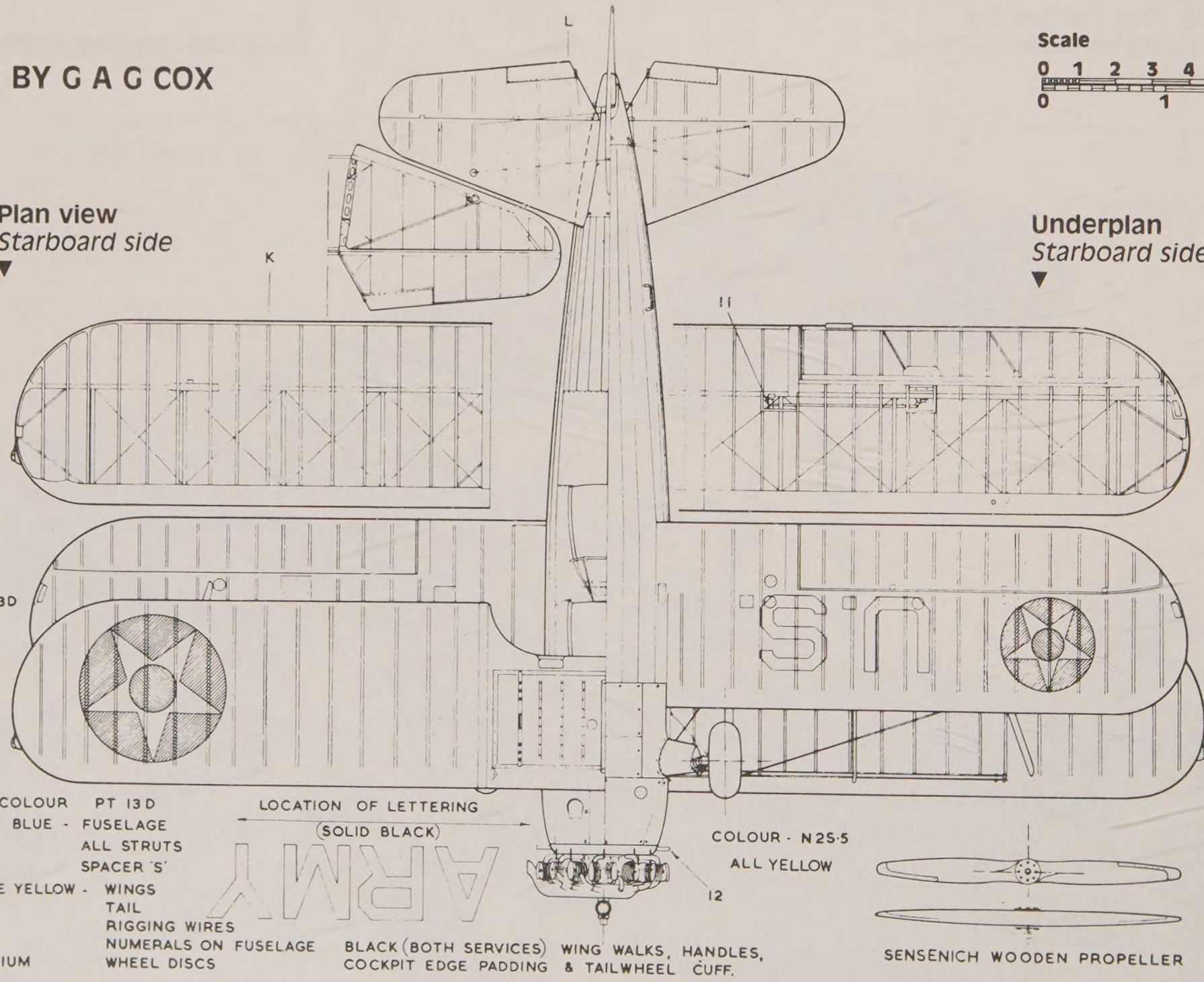
US Army PT-13D, its Lycoming R-680-17 engine distinguished by the frontal exhaust collector ring. Colours are chrome yellow flying surfaces and blue fuselage. (R Stouffer)
▼

DRAWN BY G A G COX

Scale
0 1 2 3 4 5 6 7 8 ft
0 1 2m

Plan view
Starboard side
▼

Underplan
Starboard side
▼



COLOUR PT 13D
BRIGHT BLUE - FUSELAGE
ALL STRUTS
SPACER 'S'
CHROME YELLOW - WINGS
TAIL
RIGGING WIRES
NUMERALS ON FUSELAGE
ALUMINIUM WHEEL DISCS

LOCATION OF LETTERING
(SOLID BLACK)

BLACK (BOTH SERVICES) WING WALKS, HANDLES,
COCKPIT EDGE PADDING & TAILWHEEL CUFF.

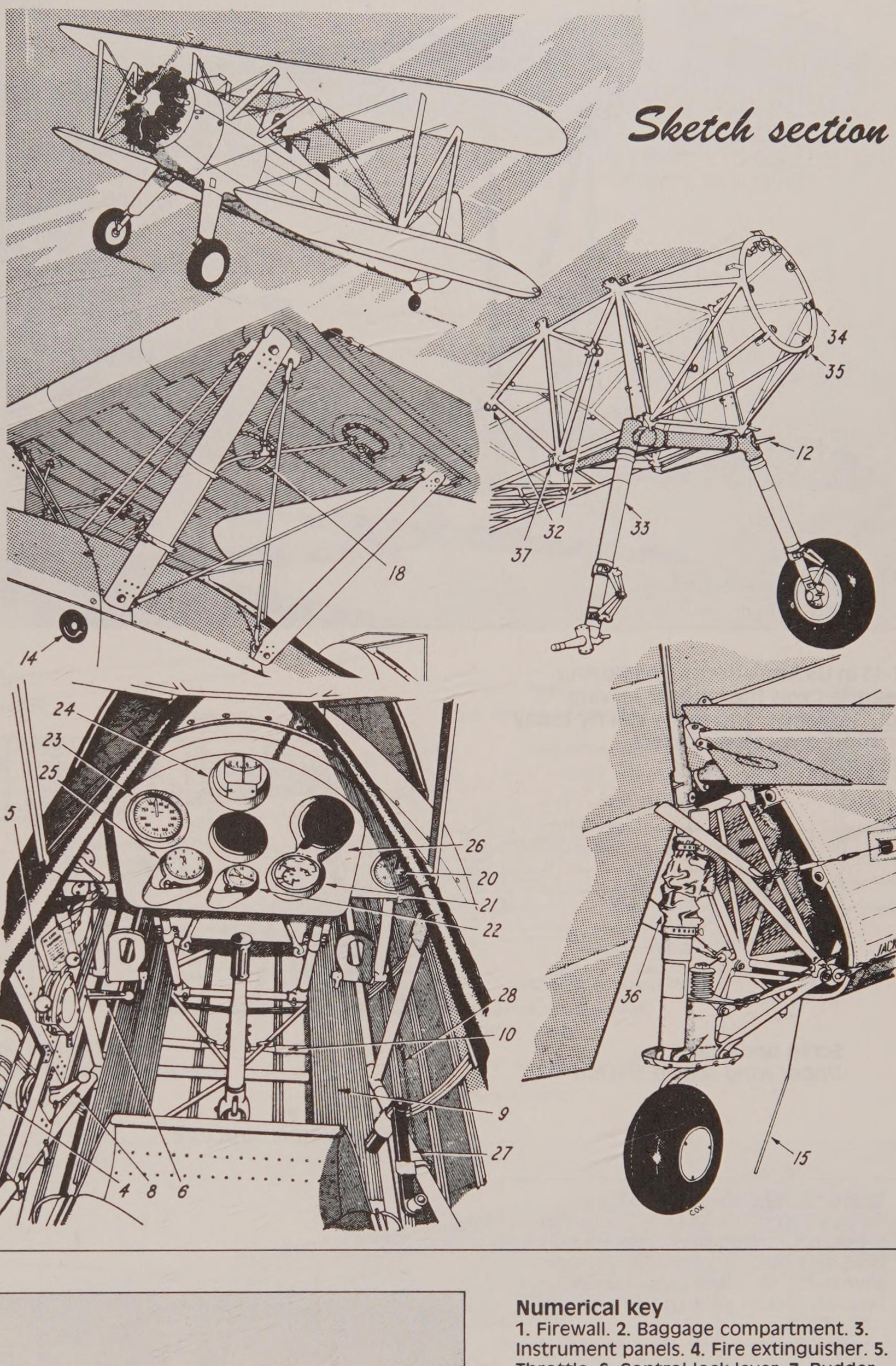
COLOUR - N25·5
ALL YELLOW

SENSENICH WOODEN PROPELLER

▲
A Stearman N2S-3 in Navy markings. This model was the same as the N2S-1, except for the fitting of a later-model Continental R-670-4 engine. (R Stouffer)

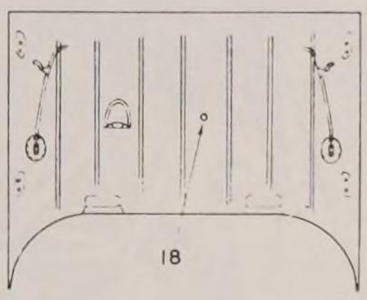
US Navy N2S-4, with Continental engine, seen at the 1984 Annual Stearman Convention and fly-in, Galesburg, Illinois. (R Stouffer)
▼

Sketch section

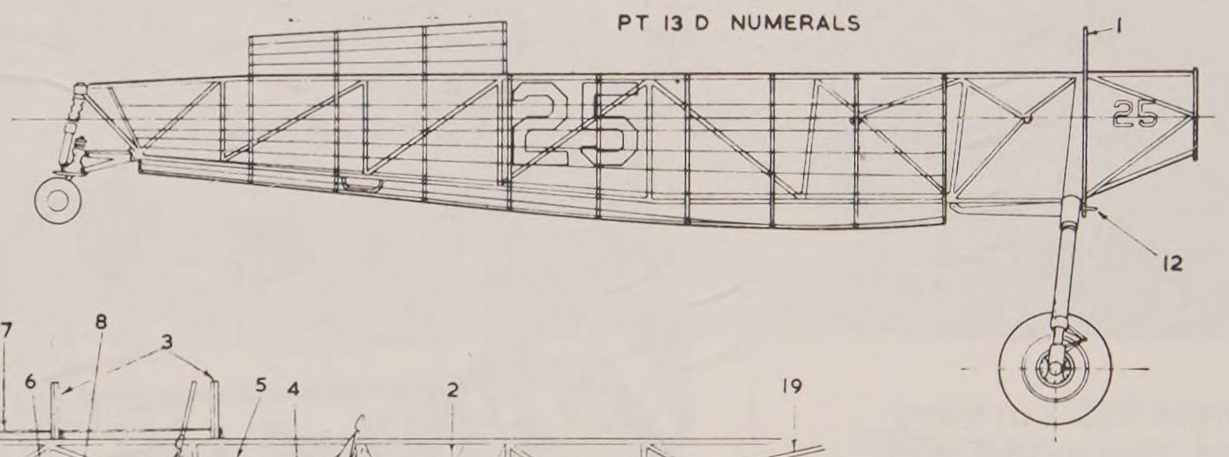


Numerical key
1. Firewall. 2. Baggage compartment. 3. Instrument panels. 4. Fire extinguisher. 5. Throttle. 6. Control lock lever. 7. Rudder pedal. 8. Elevator trim. 9. Corrugated heel boards. 10. Link rod to aileron crank. 11. Aileron crank. 12. Step. 13. Petrol filler cap. 14. Oil filler cap. 15. Static discharge rod. 16. Carburettor air intake. 17. Magneto switch operating rod. 18. Fuel gauge. 19. Elevator control tube. 20. Engine rpm. 21. Oil temperature and pressure. 22. Clock. 23. ASI. 24. Compass. 25. Altimeter. 26. Instrument panel, bevelled along sight lines. 27. Inertia starting handle (rear cockpit only). 28. Rudder cable. 29. Magneto switch. 30. Fuel cock. 31. Front seat. 32. Mounting lugs for pedals. 33. Complete undercarriage assembly detaches. 34. Engine mounting lugs. 35. Cowling attachment points. 36. Canvas cover. 37. Front spar mounting.

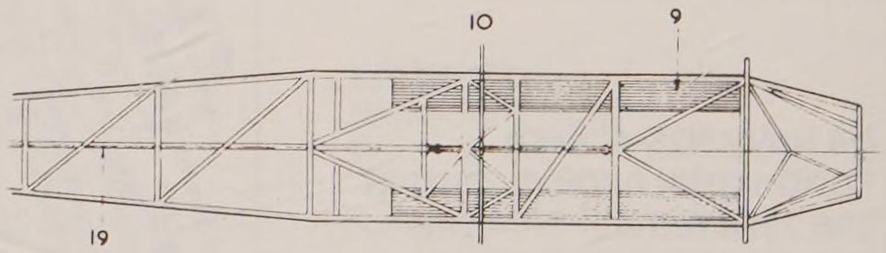
▲
PT-13 in US Army decor. The Boeing-Stearman was the longest serving biplane trainer, and many still fly today for sport or as crop-dusters. (M Passingham)

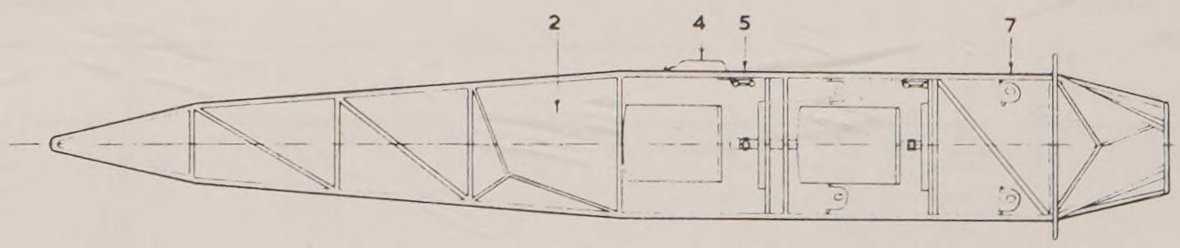


Scrap underplan
Upper wing centre-section

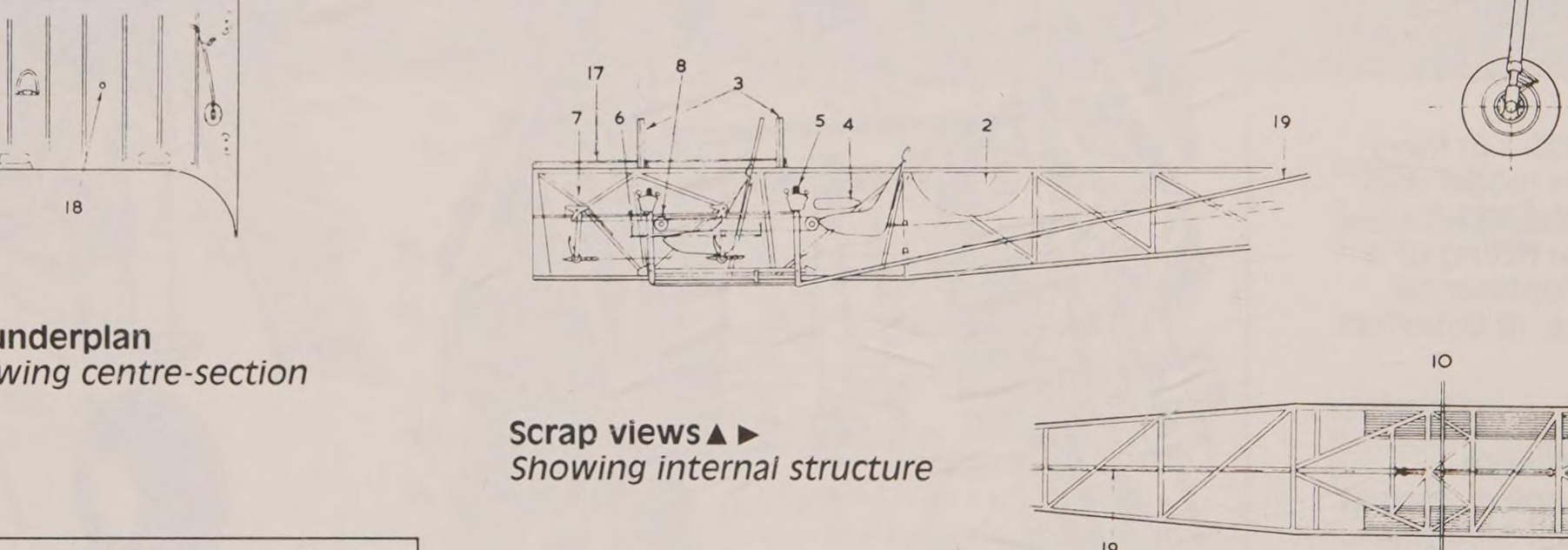


Scrap views▲►
Showing internal structure





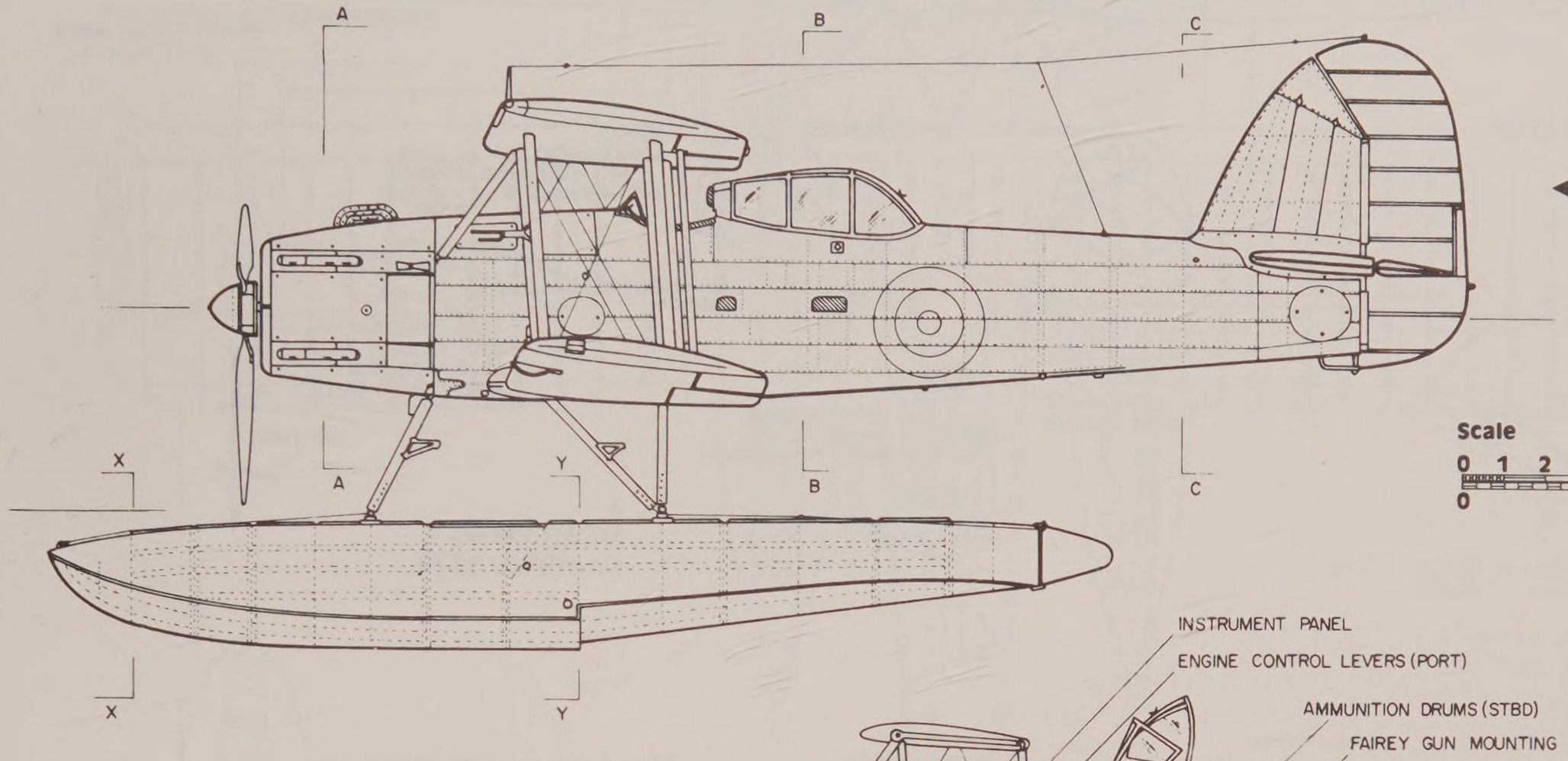
Colour notes, PT-13D
Fuselage, all struts, spacers – bright blue. Wings, tail, rigging wires, numerals on fuselage – chrome yellow. Wheel discs – aluminium. Wing walks, wing lettering, handles, cockpit edge padding, tailwheel cuff – black.



Front elevation▲

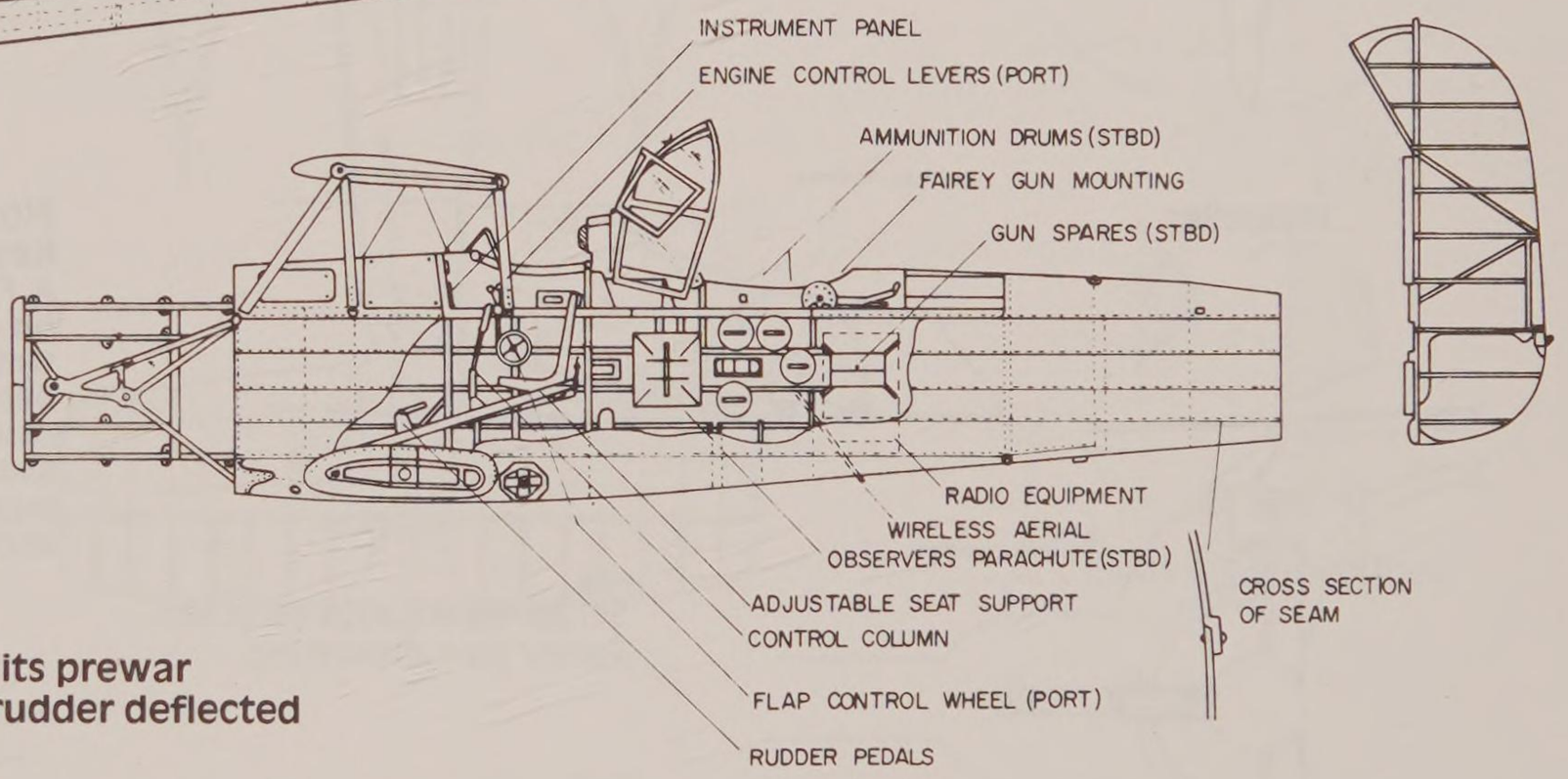
Fairey Seafox

Country of origin: Great Britain.
Type: Two-seat, ship-based light reconnaissance seaplane.
Dimensions: Wing span 40ft 0in *12.19m*; length 33ft 5½in *10.20m*; height 12ft 2in *3.71m*; wing area 434 sq ft *40.32m²*.
Weights: Empty 3805lb *1726kg*; loaded 5420lb *2458kg*; max catapulting 5650lb *2562kg*.
Powerplant: One Napier Rapier VI sixteen-cylinder, H type, air-cooled engine rated at 395hp.
Performance: Maximum speed 124mph *199.6kph*; initial climb rate 420ft/min *130m/min*; service ceiling 9700ft *2950m*; range 440 miles *710km*.
Armament: One flexibly mounted 0.303in Lewis machine gun.
Service: First flight (prototype) 27 May 1936; service entry 23 April 1937.



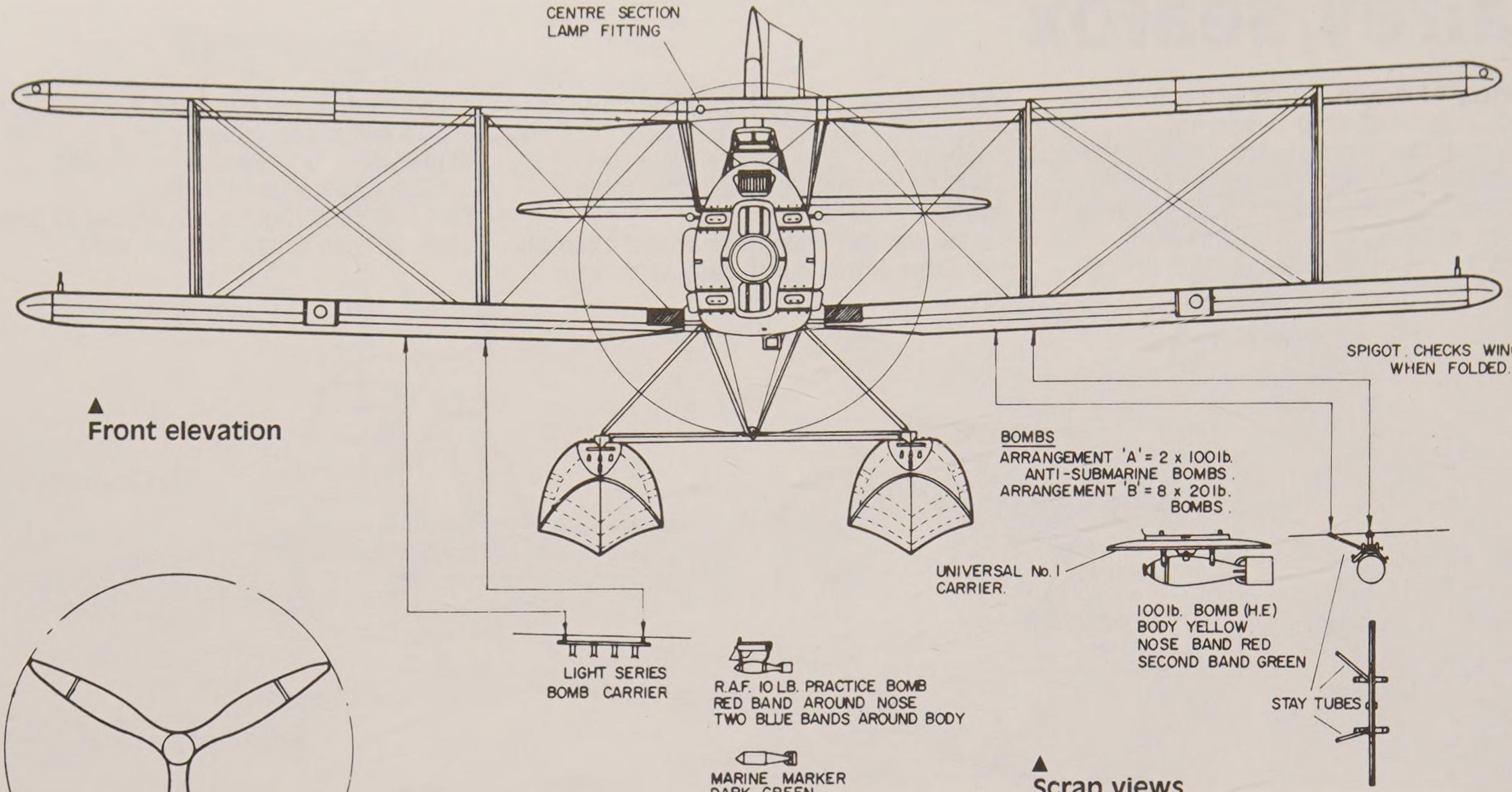
◀ Port elevation

Scale
0 1 2 3 4 5 6 7 8 ft
0 1 2m



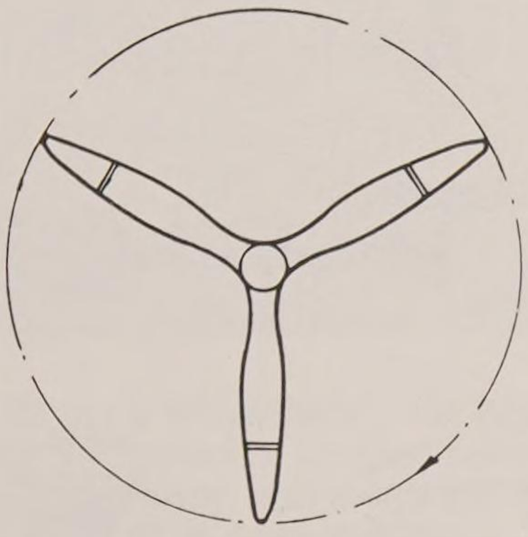
Port inboard profile ▶

K8575, the seventh production Seafox, in its prewar aluminium finish. Flaps are lowered and rudder deflected to starboard. (H Woodman)
▼

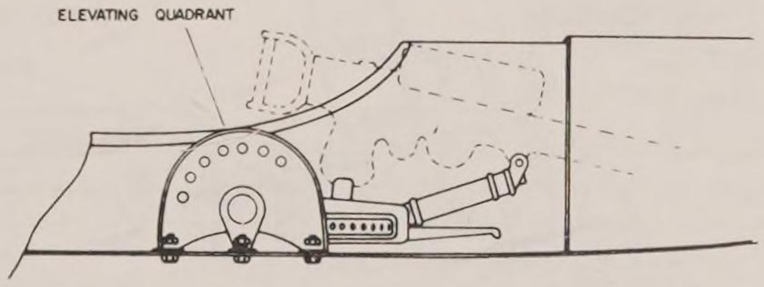


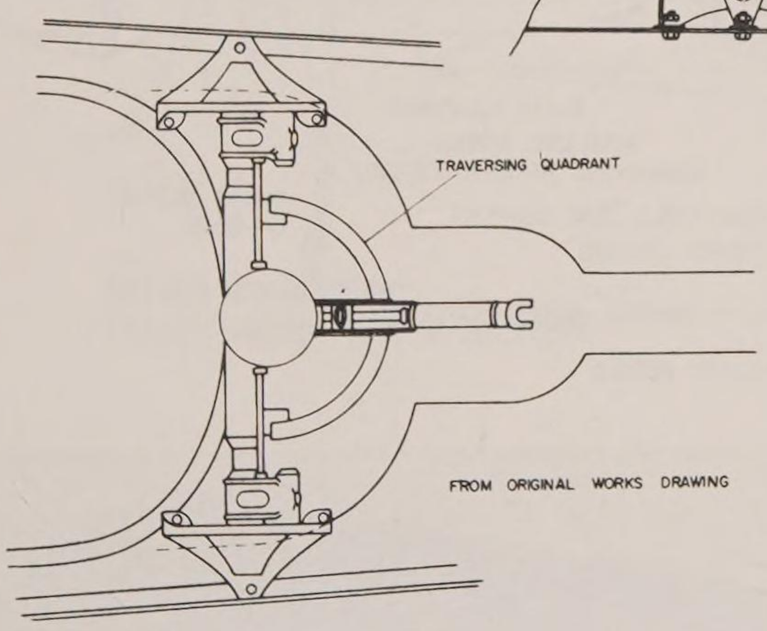
▲ **Front elevation**

▲ **Scrap views**
Bomb carriage



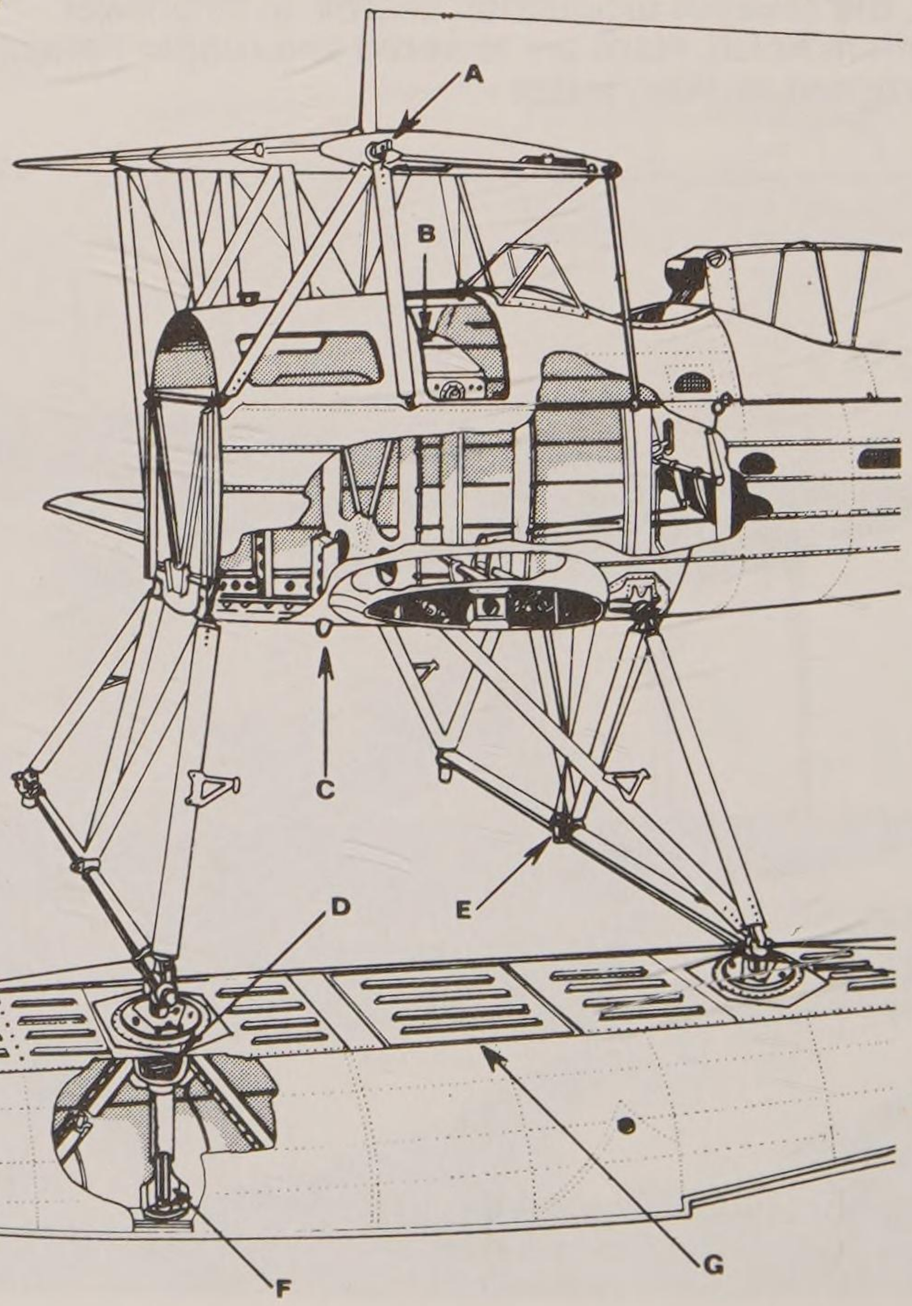
▲ **Propeller**

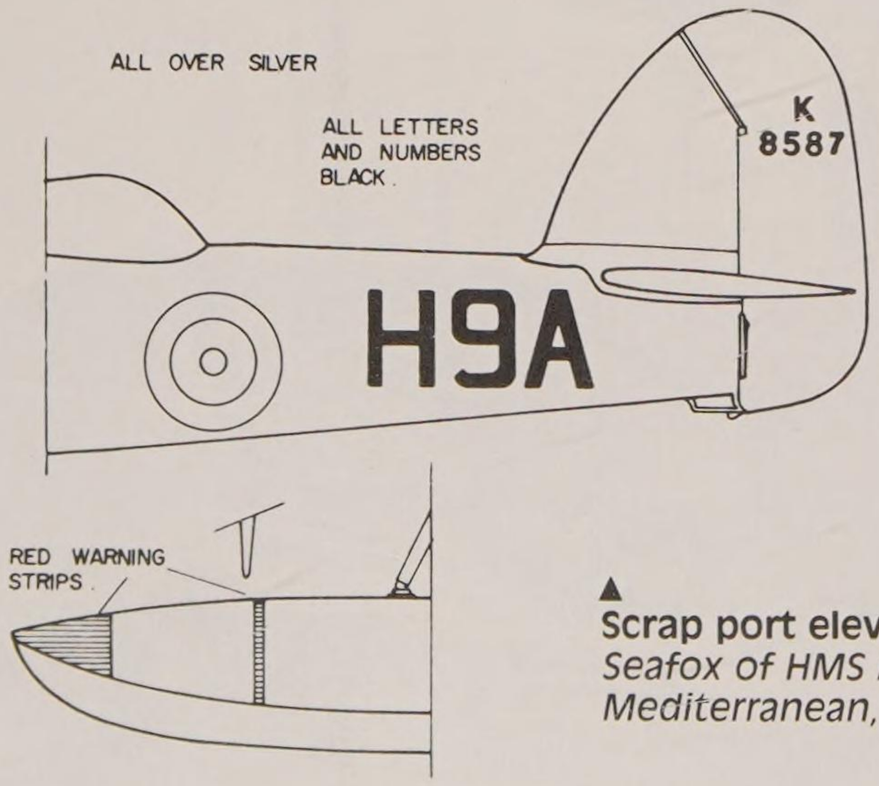




◄▲ **Scrap views (not to scale)**
Fairey gun mounting

Float struts and fitting ▼
Key
A. Front spar lug to pick up with locking bar on wing root. **B.** Oil tank. **C.** Locking lug and trestle point. **D.** Rubber buffer rings between flanges on sliding leg and outer casing. **E.** Water rudder control pulleys. **F.** Sliding leg attached to lower part of strut (lug) and end-of-travel buffer. **G.** Lid to anchor stowage.

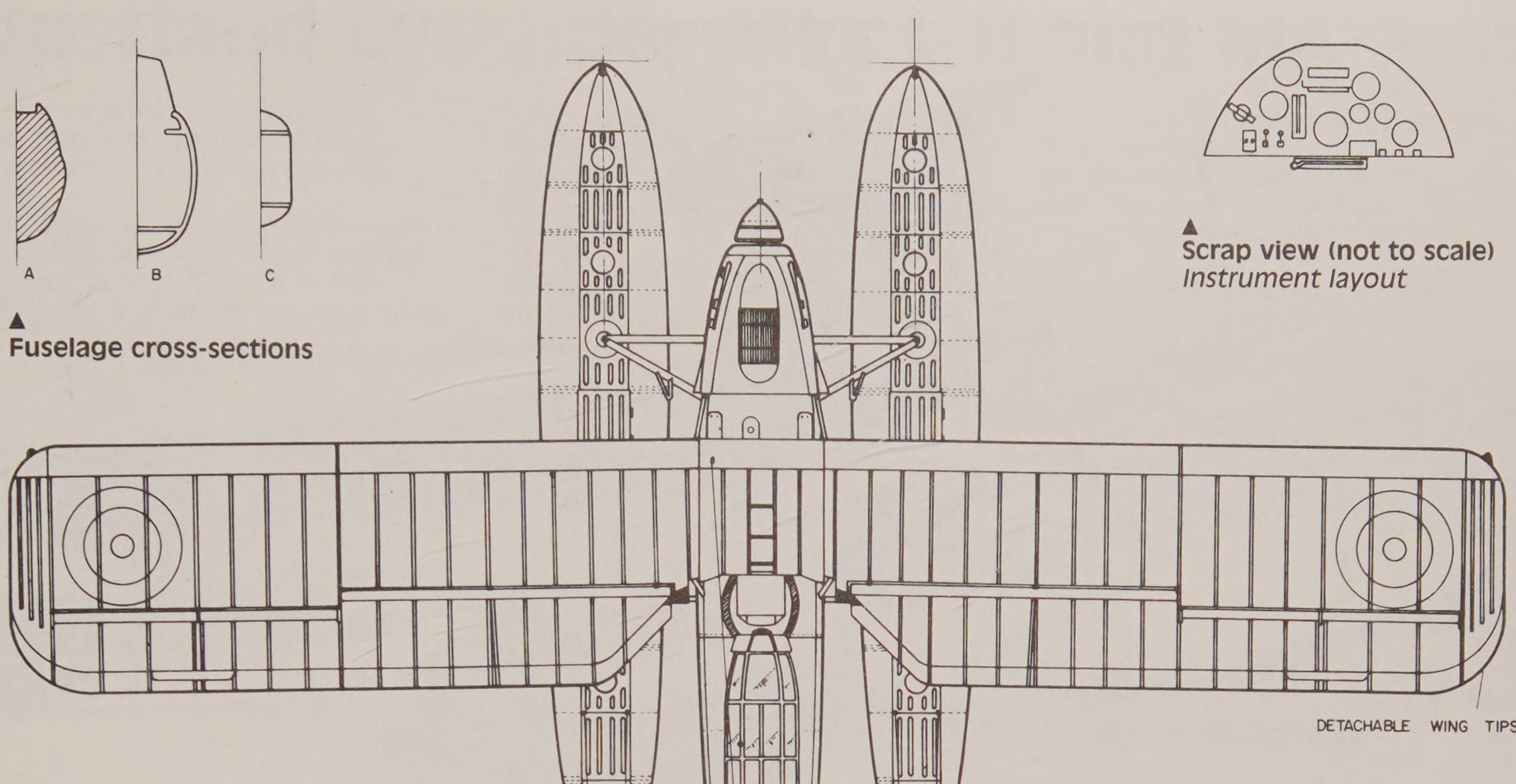




▲ **Scrap port elevations**
Seafox of HMS Arethusa, *Mediterranean, June 1939*

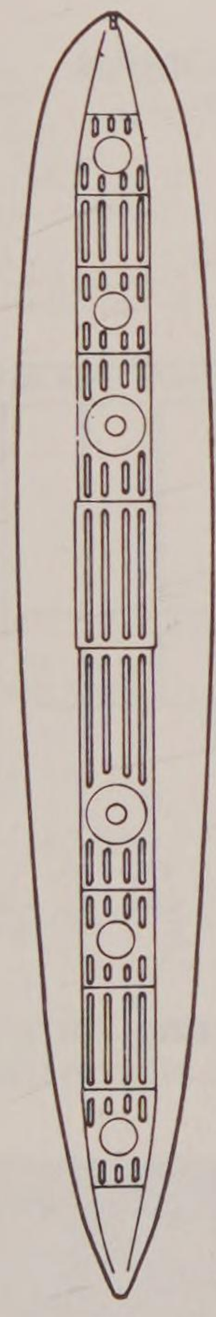
▲
Fuselage cross-sections

▲
Scrap view (not to scale)
Instrument layout

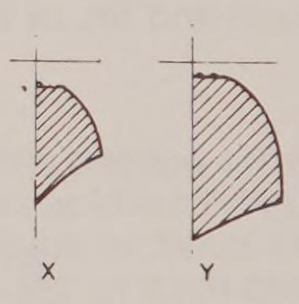


▲
Plan view

NOTE: RUDDER & VERTICAL FIN
ASYMMETRIC IN PLAN VIEW



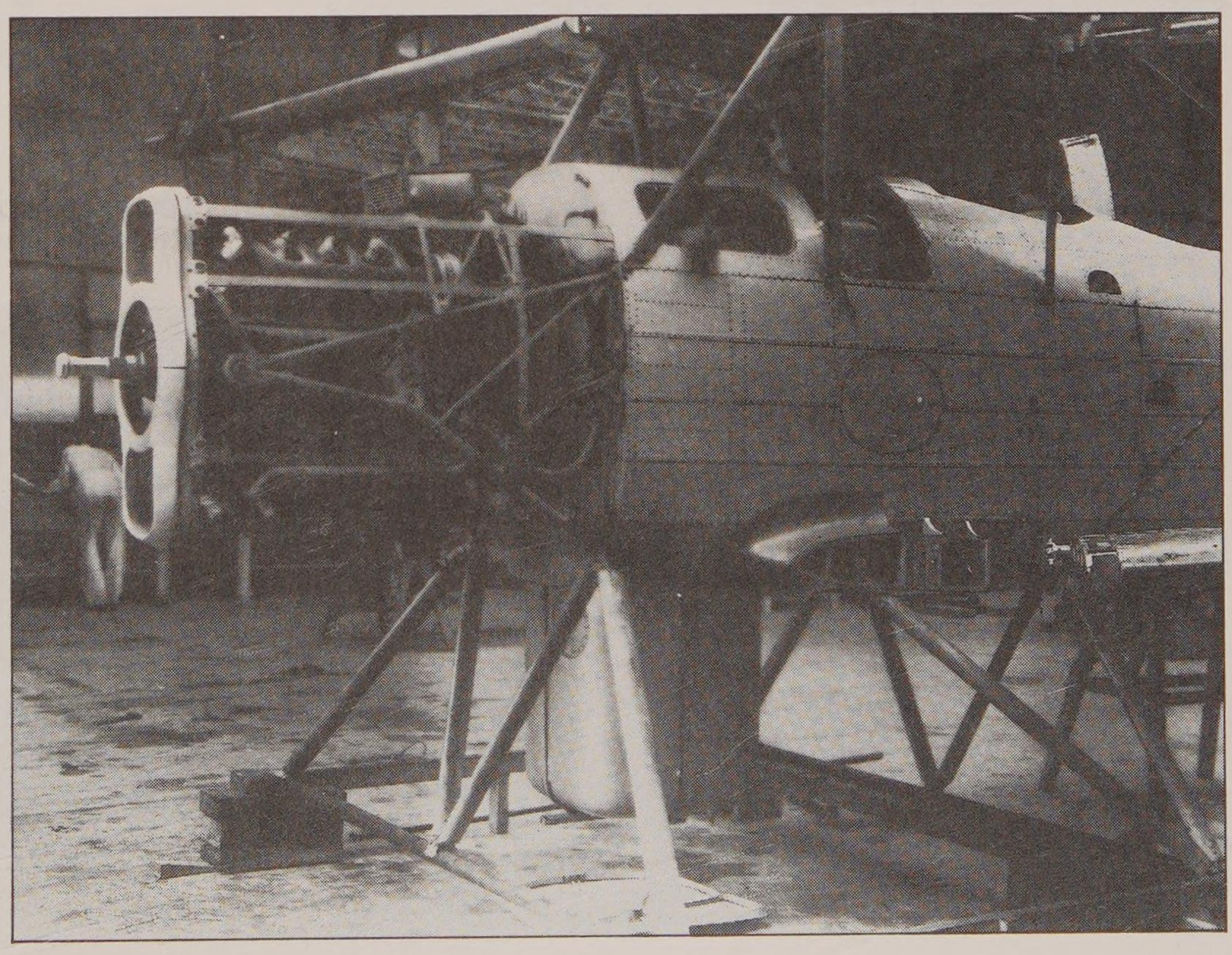
▲
Scrap plan view
Float



▲
Float cross-sections

Scale

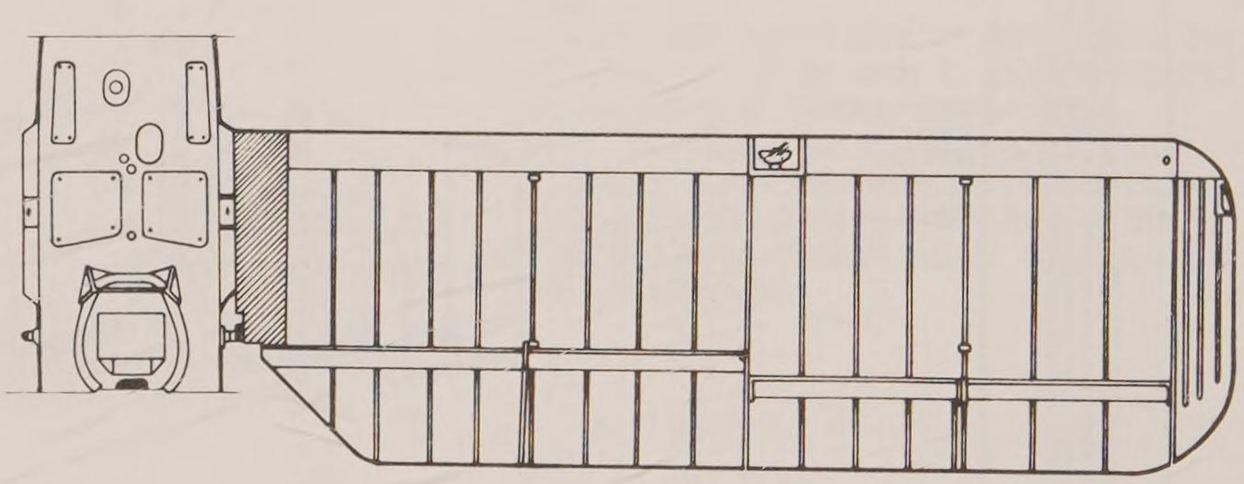
0 1 2 3 4 5 6 7 8 ft
0 1 2 m



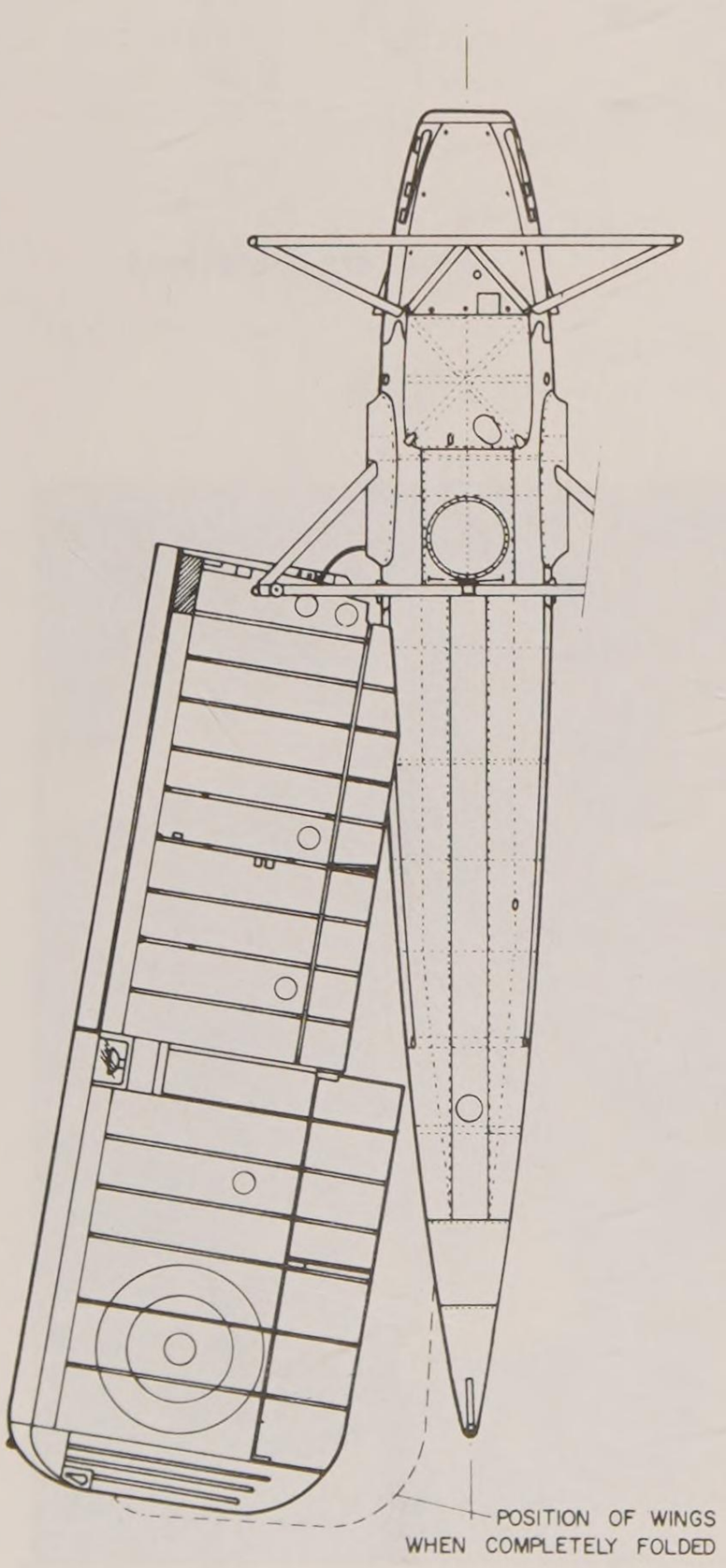
Constructional photo showing engine bearers, lower wing root detail (port wing folded back) and float struts. ►

▲
The second prototype Seafox photographed on its beaching gear during testing at Felixstowe. Note the stylistic variations in the presentation of the serial numbers on fuselage and fin. (H Woodman)

DRAWN BY HARRY WOODMAN

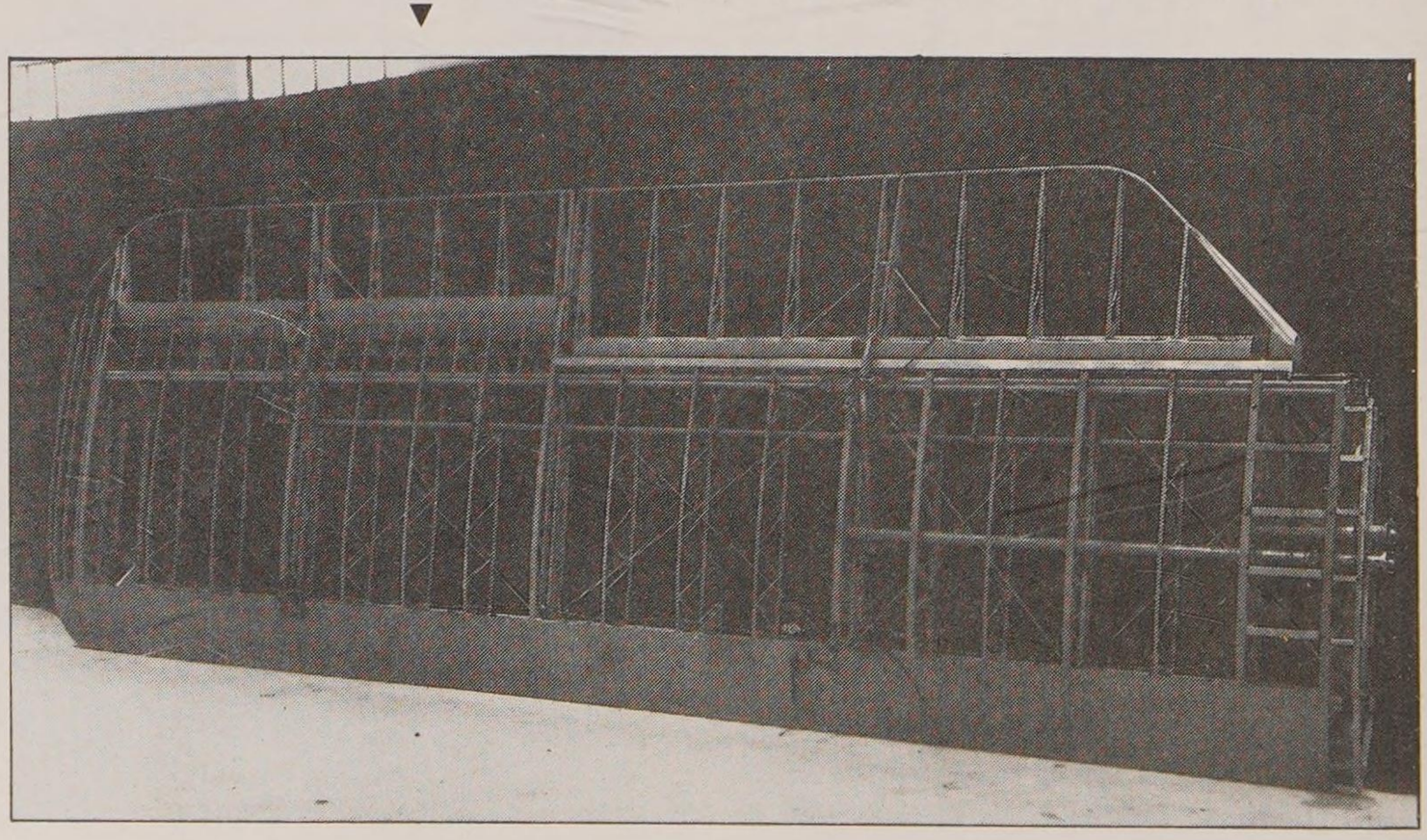


▲
Scrap plan view
Lower starboard wing



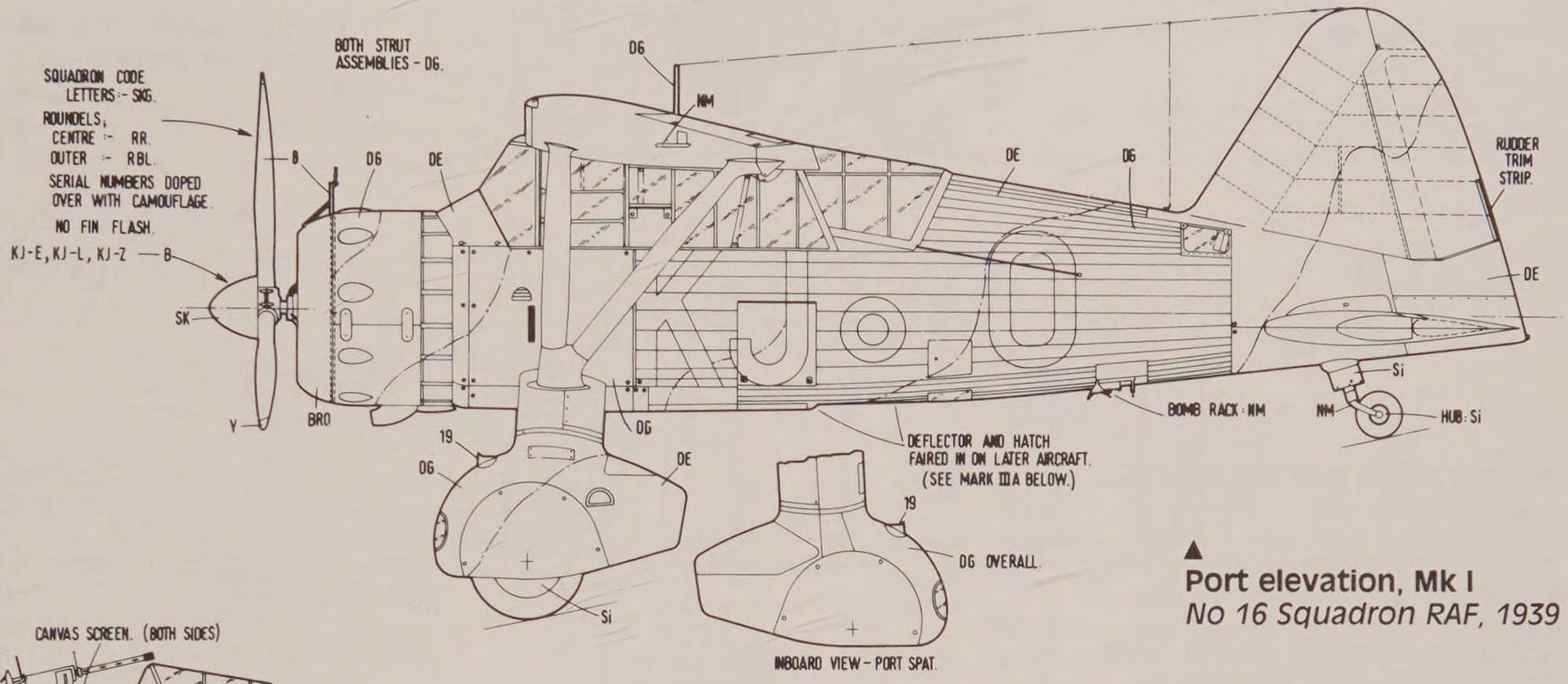
◄ **Scrap underplan**

Lower starboard wing prior to covering, showing metal-sheathed leading edge and flap and aileron hinge lines.
▼

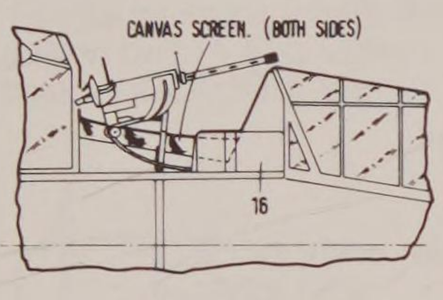


Westland Lysander Mks I, II and IIIA

Country of origin: Great Britain.
Type: Two-seat, land-based army co-operation and general-purpose aircraft.
Dimensions: Wing span 50ft 0in *15.24m*; length 30ft 6in *9.30m*; height 14ft 6in *4.42m*; wing area 260 sq ft *24.15m²*.
Weights: Empty 4365lb *1980kg*; loaded 6318lb *2865kg*.
Powerplant: One Bristol Mercury XII nine-cylinder radial engine rated at 890hp, (Mk II) Perseus XII rated at 905hp, (Mk III) Mercury XX or XXX rated at 870hp, (Mk IIIA) Mercury XXX rated at 870hp.
Performance: Maximum speed 212mph *341kph* at 5000ft *1525m*; initial climb rate 1410ft/min *430m/min*; service ceiling 21,500ft *6550m*.
Armament: Two fixed 0.303in Browning machine guns and one flexibly mounted Vickers K gun, plus up to six light bombs.
Service: First flight (prototype) 15 June 1936; service entry (Mk I) late 1938.



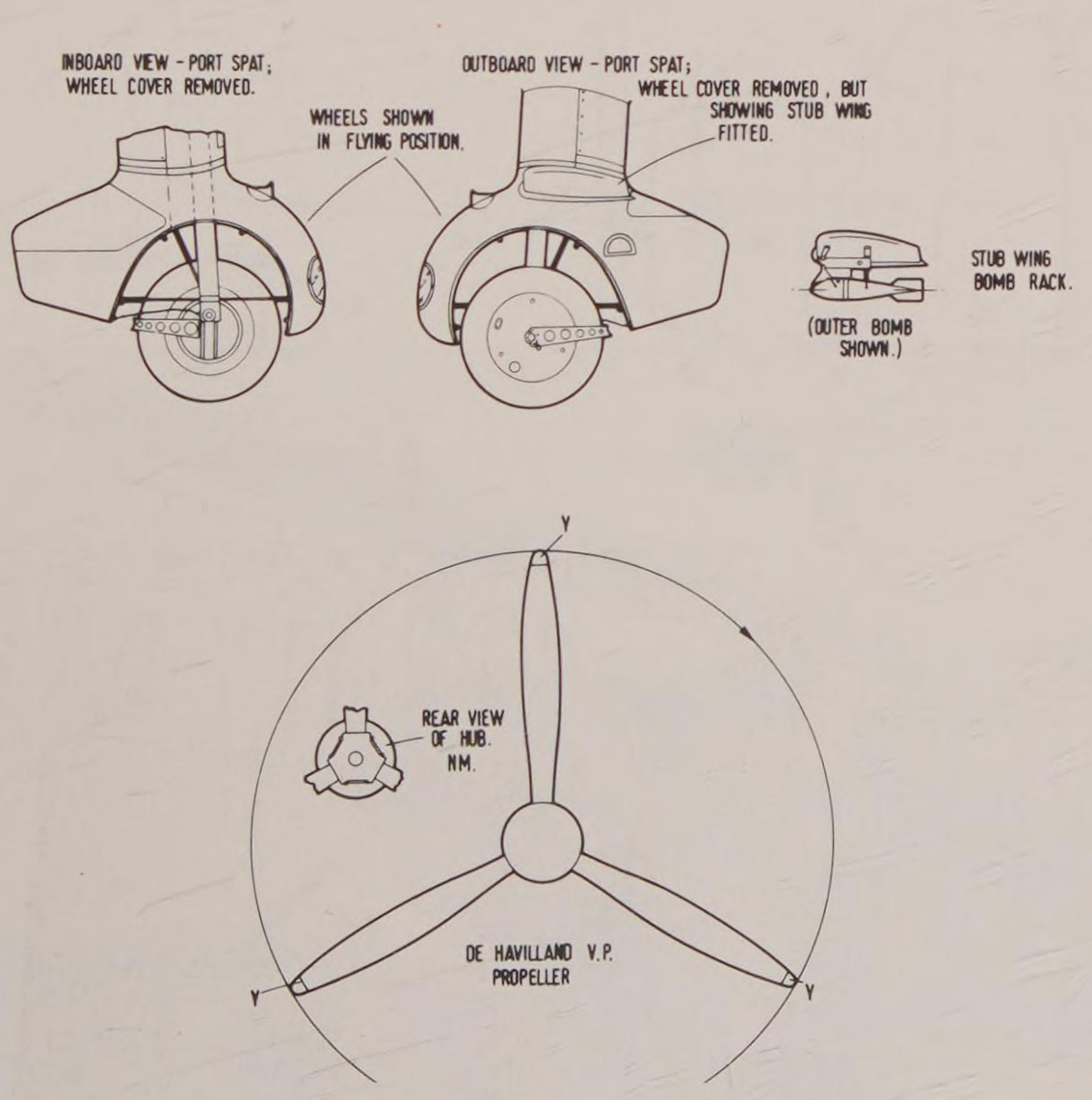
▲
Port elevation, Mk I
No 16 Squadron RAF, 1939



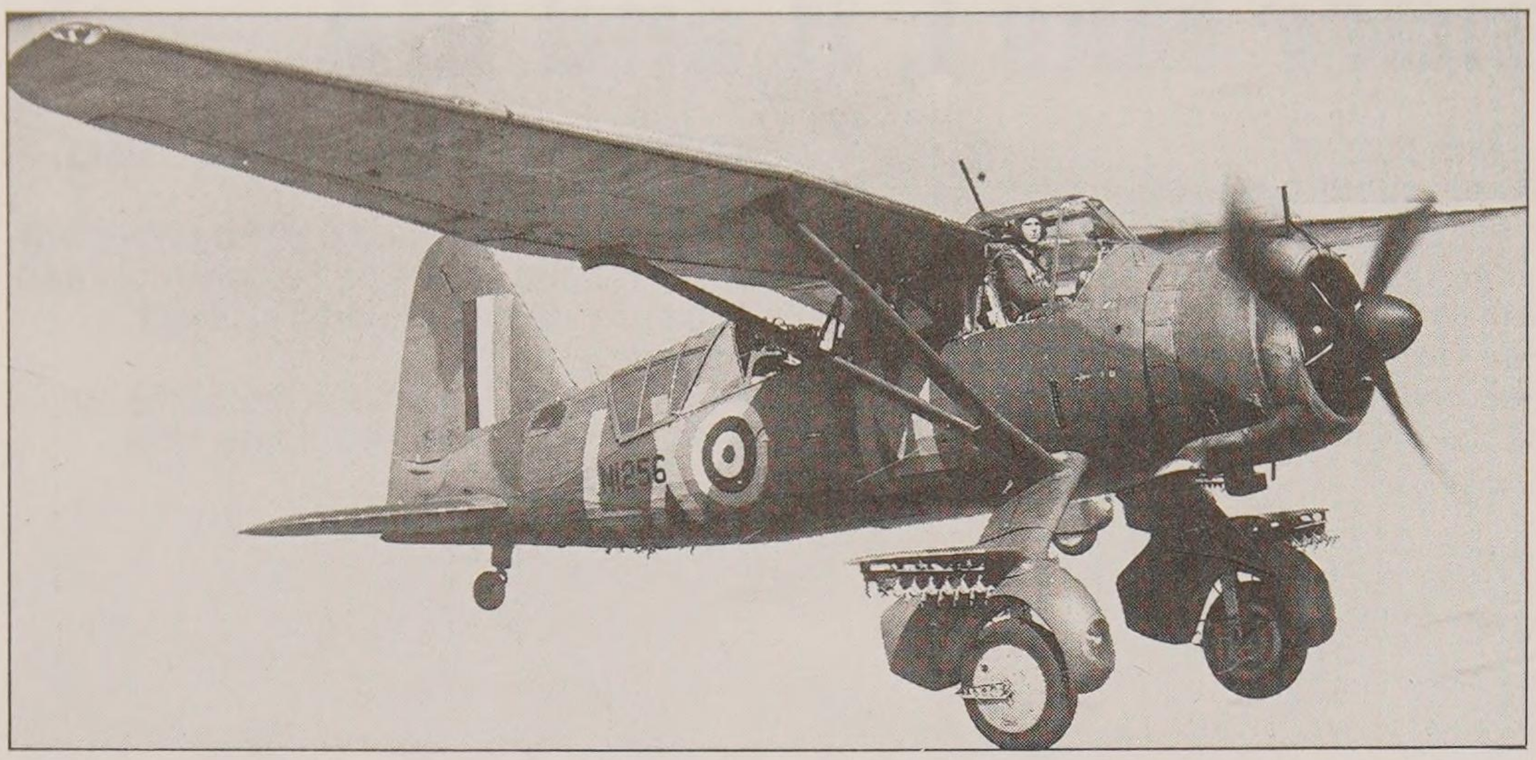
◄ **Scrap port elevation, Mk IIIA**
Gunner's cockpit
SHOWING MODIFIED CANOPY

Prewar shot of a trio of Lysanders peeling off for the camera, the shape of the tailplanes identifying the machines as Mk IIs. The camouflage patterns of the two nearest aircraft are 'mirror images' of each other.
▼

Scrap views
Undercarriage spats
▼

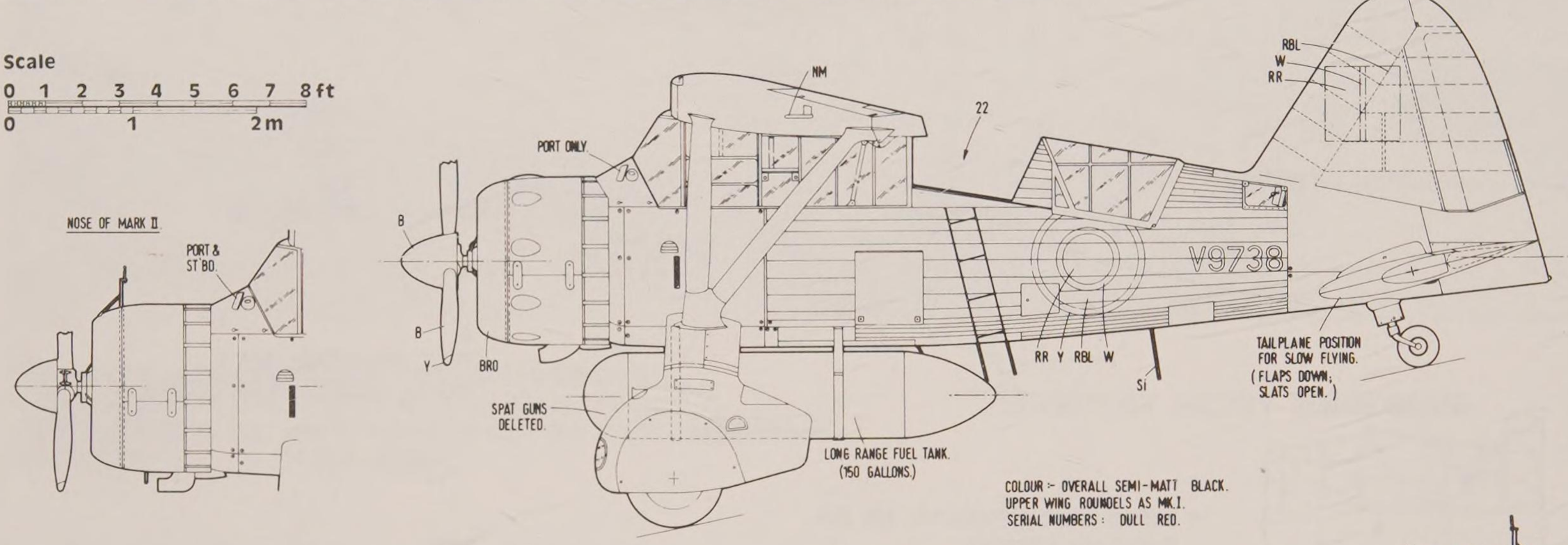

INBOARD VIEW - PORT SPAT; WHEEL COVER REMOVED.
WHEELS SHOWN IN FLYING POSITION.
OUTBOARD VIEW - PORT SPAT; WHEEL COVER REMOVED, BUT SHOWING STUB WING FITTED.
STUB WING BOMB RACK.
(OUTER BOMB SHOWN.)
Y
REAR VIEW OF HUB. NM.
DE HAVILLAND V.P. PROPELLER

▲
Propeller details



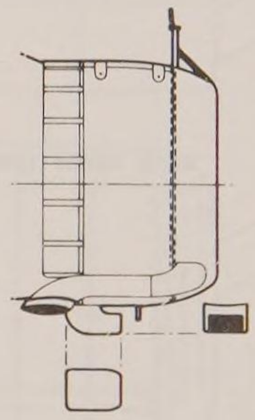
◄ Lysander II with wheel spat panels removed. A second aircraft is flying behind the subject of the photo, its starboard wheel just discernible. Finish is standard Dark Green and Dark Earth camouflage.

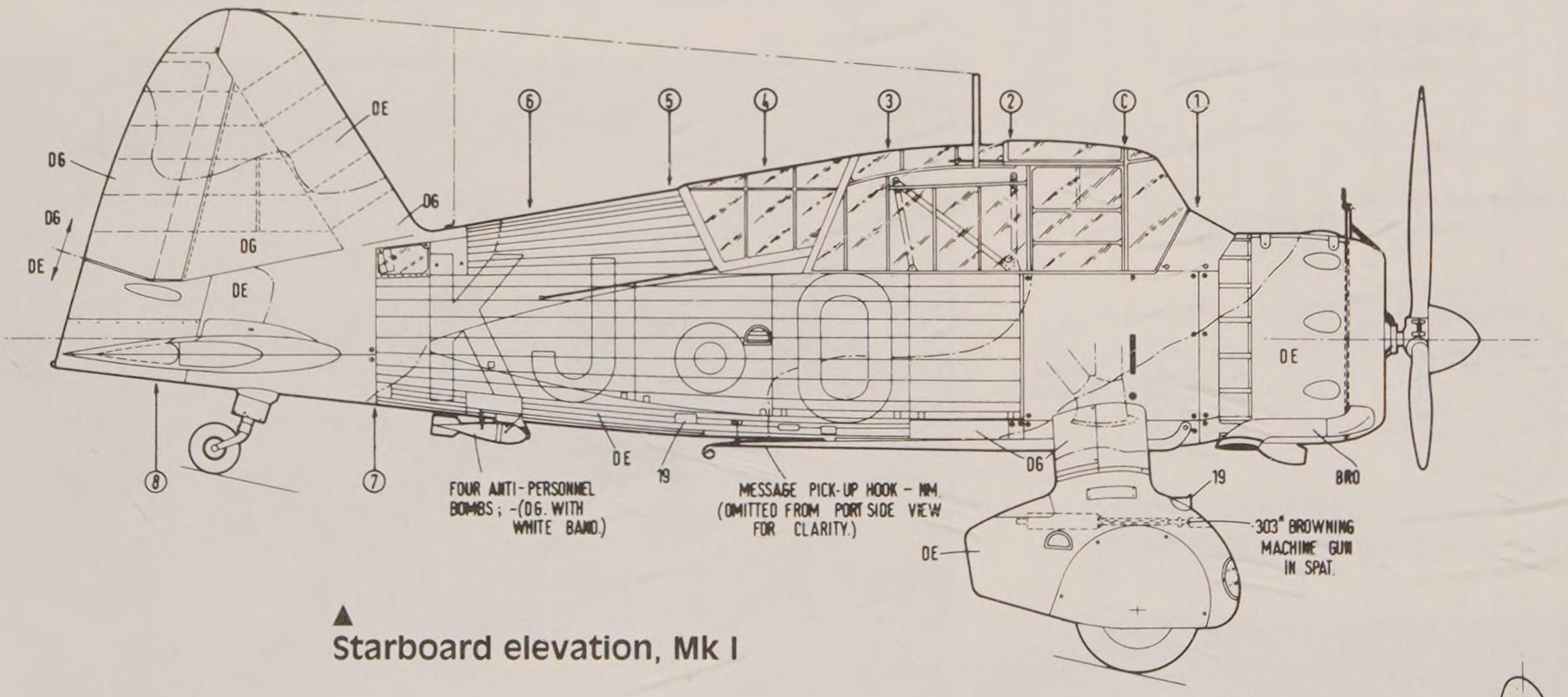
Port elevation, Mk IIIA
Special Air Service
▼



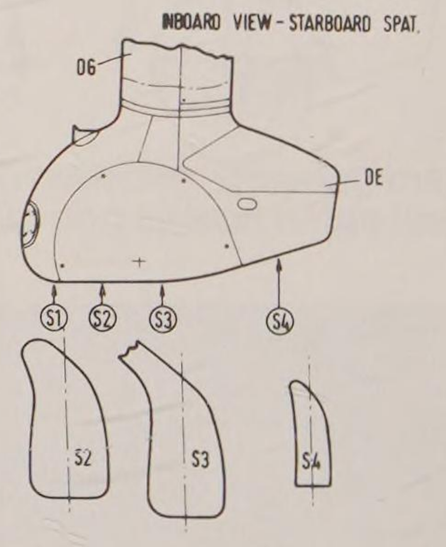
DRAWN BY G R DUVAL

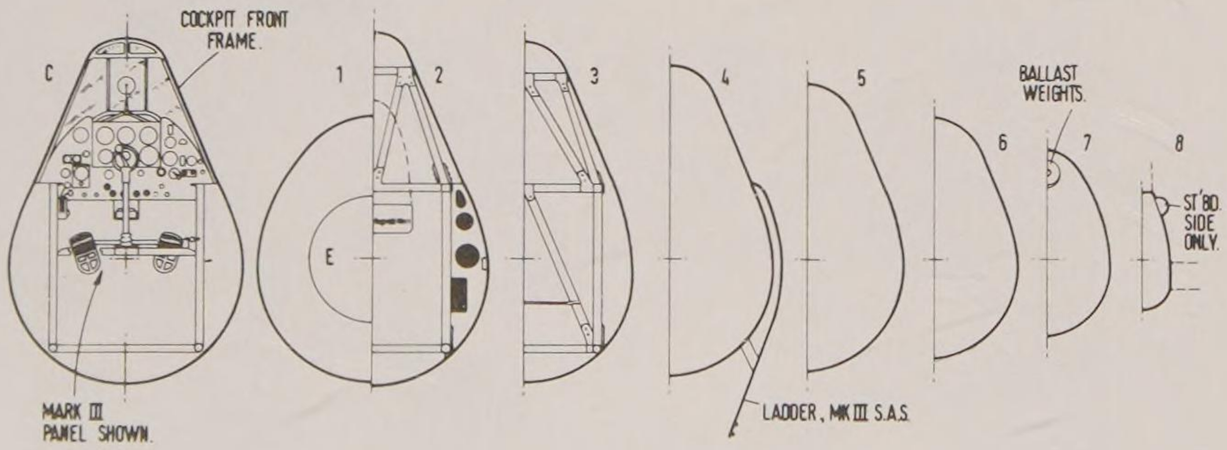
Scrap starboard elevation, Mk II ►



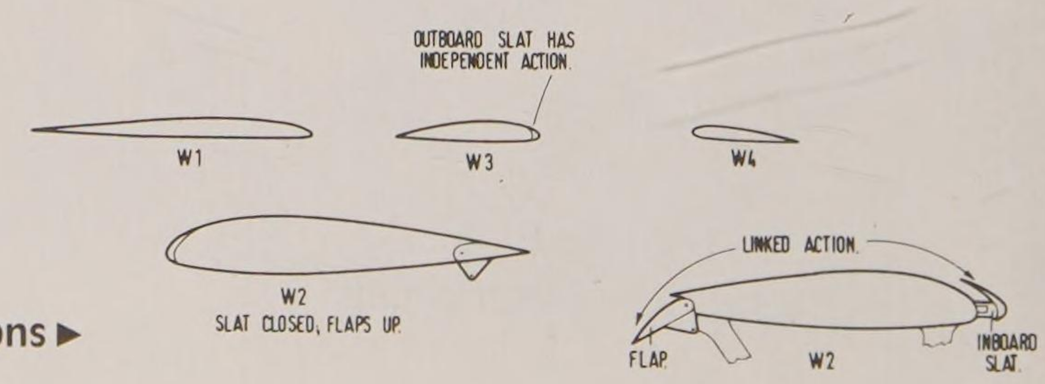


▲
Starboard elevation, Mk I

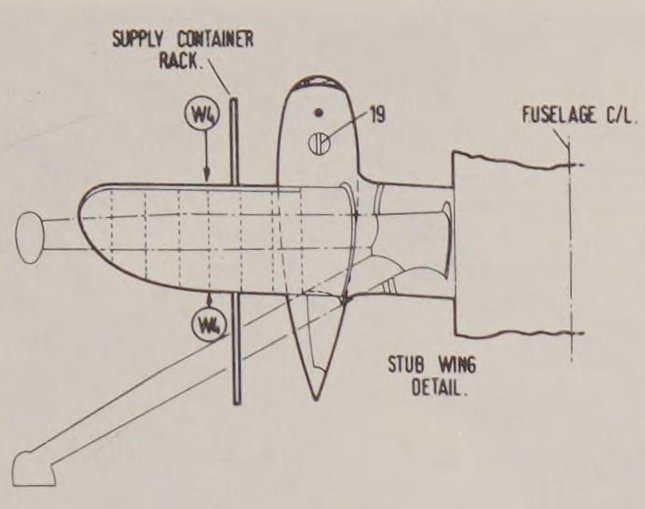




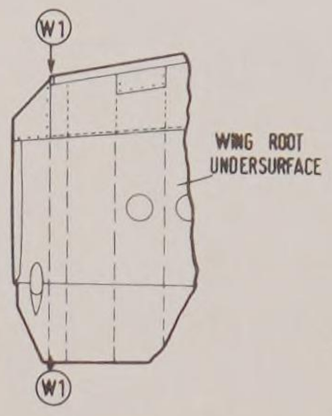
▲
Fuselage cross-sections



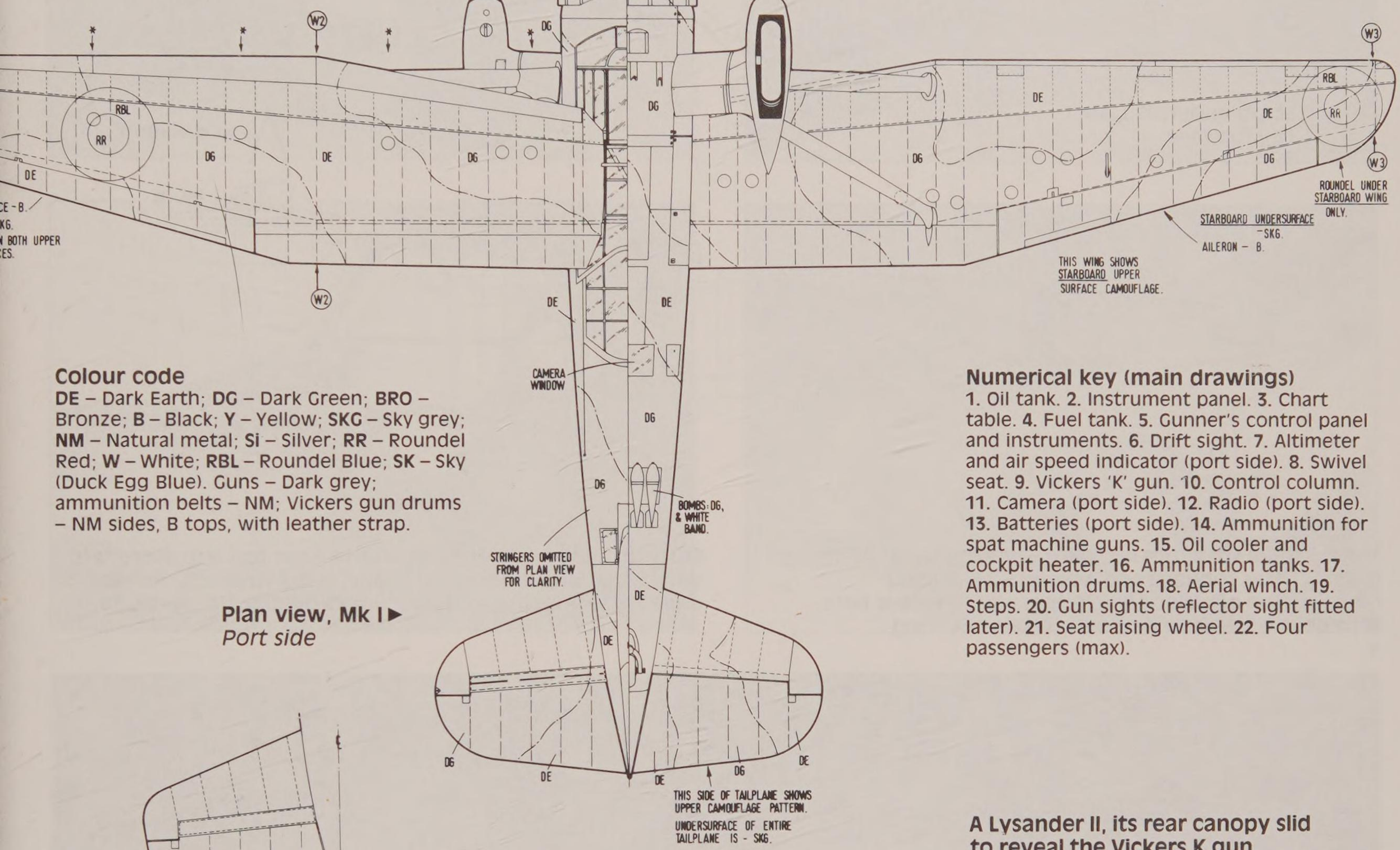
Wing cross-sections ►



Scrap plan view
Stub wing detail
▲



Underplan, Mk I
Port side
▼



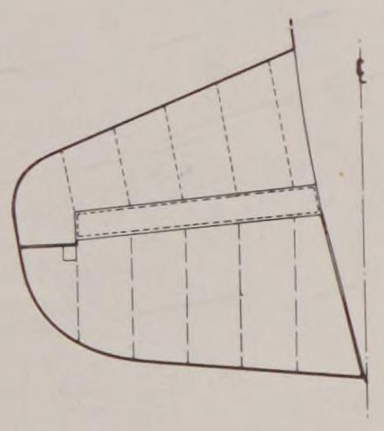
Colour code

DE – Dark Earth; **DG** – Dark Green; **BRO** – Bronze; **B** – Black; **Y** – Yellow; **SKG** – Sky grey; **NM** – Natural metal; **Si** – Silver; **RR** – Roundel Red; **W** – White; **RBL** – Roundel Blue; **SK** – Sky (Duck Egg Blue). Guns – Dark grey; ammunition belts – NM; Vickers gun drums – NM sides, B tops, with leather strap.

Numerical key (main drawings)

1. Oil tank. **2.** Instrument panel. **3.** Chart table. **4.** Fuel tank. **5.** Gunner's control panel and instruments. **6.** Drift sight. **7.** Altimeter and air speed indicator (port side). **8.** Swivel seat. **9.** Vickers 'K' gun. **10.** Control column. **11.** Camera (port side). **12.** Radio (port side). **13.** Batteries (port side). **14.** Ammunition for spat machine guns. **15.** Oil cooler and cockpit heater. **16.** Ammunition tanks. **17.** Ammunition drums. **18.** Aerial winch. **19.** Steps. **20.** Gun sights (reflector sight fitted later). **21.** Seat raising wheel. **22.** Four passengers (max).

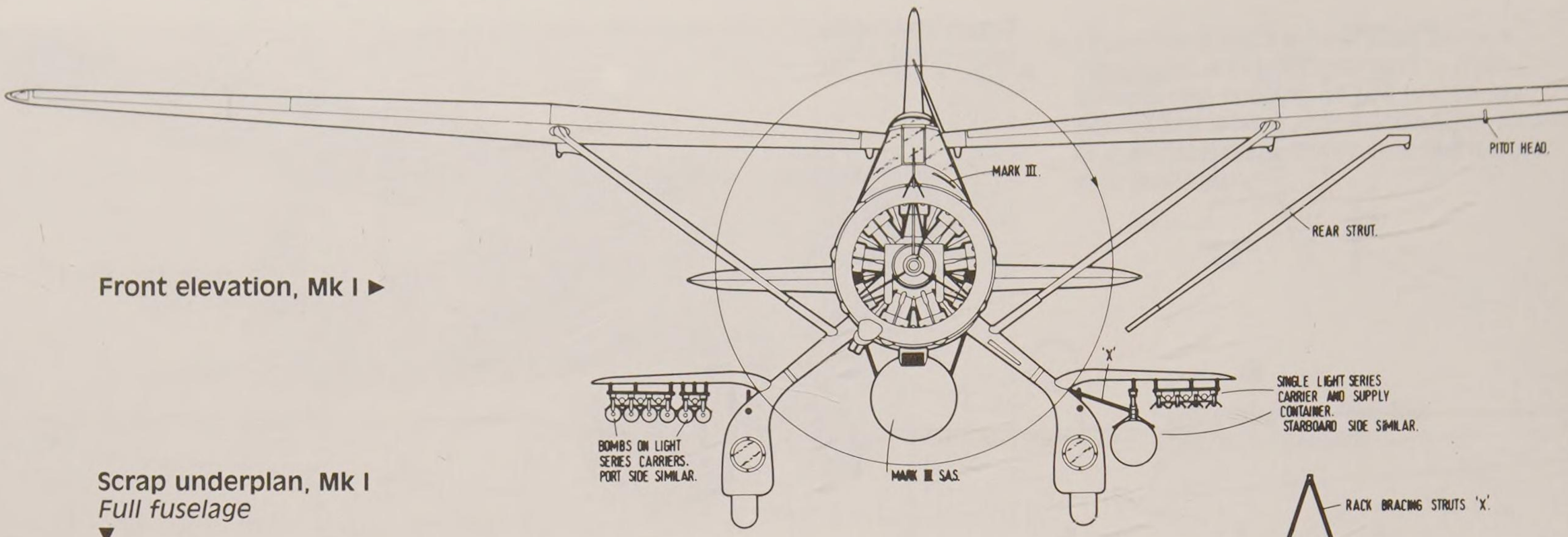
Plan view, Mk I ►
Port side



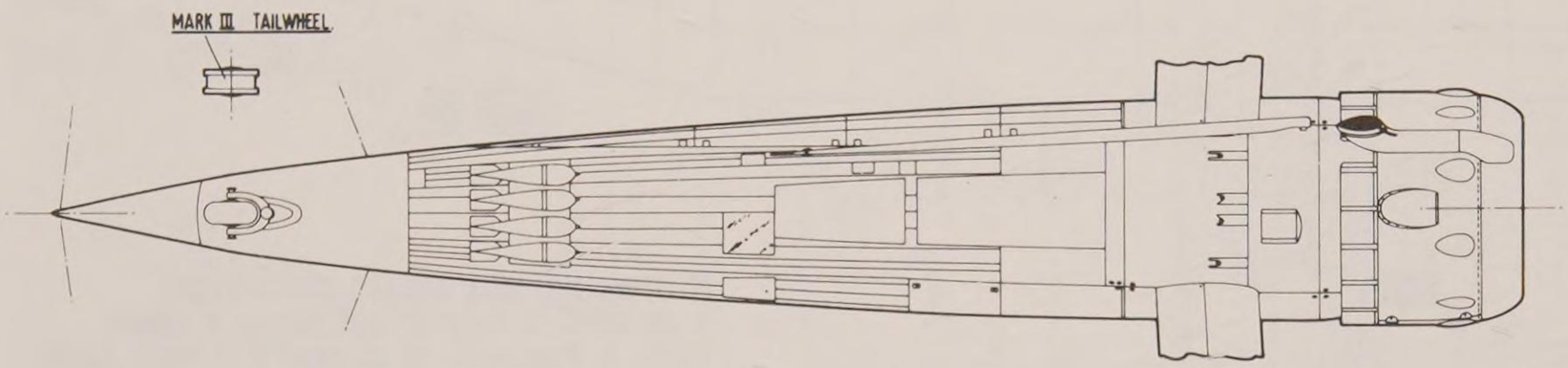
◄ Scrap plan view, Mk II
Port tailplane

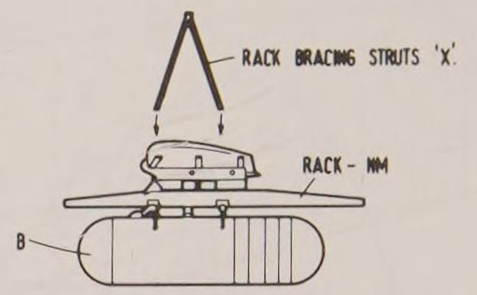
A Lysander II, its rear canopy slid to reveal the Vickers K gun and mounting. Notice the variation in fin flash design between this aircraft and its squadron stablemate depicted opposite.
▼

Front elevation, Mk I ►


MARK III.
PITOT HEAD.
REAR STRUT.
'X'
SINGLE LIGHT SERIES CARRIER AND SUPPLY CONTAINER. STARBOARD SIDE SIMILAR.
BOMBS ON LIGHT SERIES CARRIERS. PORT SIDE SIMILAR.
MARK III S.A.S.

Scrap underplan, Mk I
Full fuselage
▼

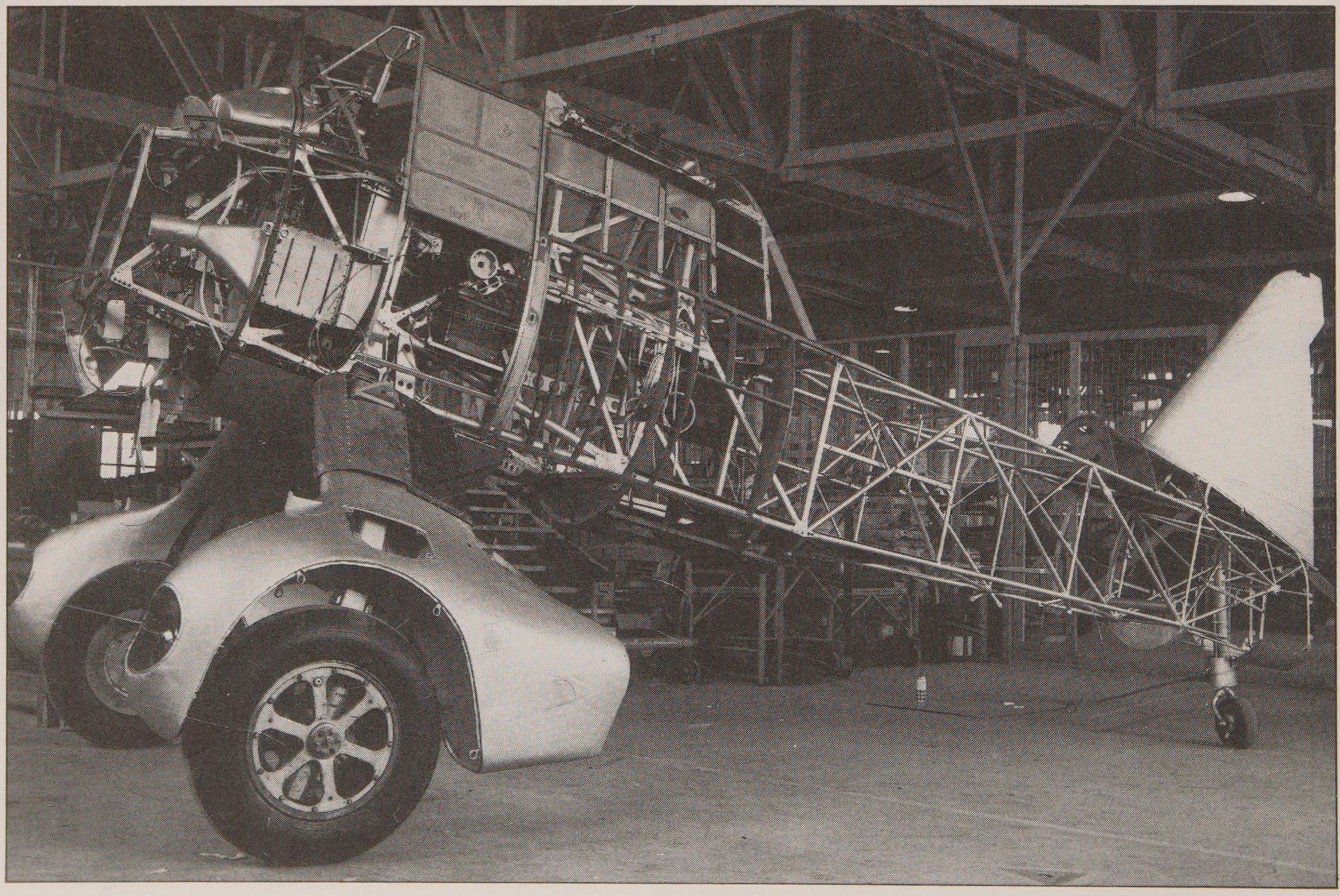


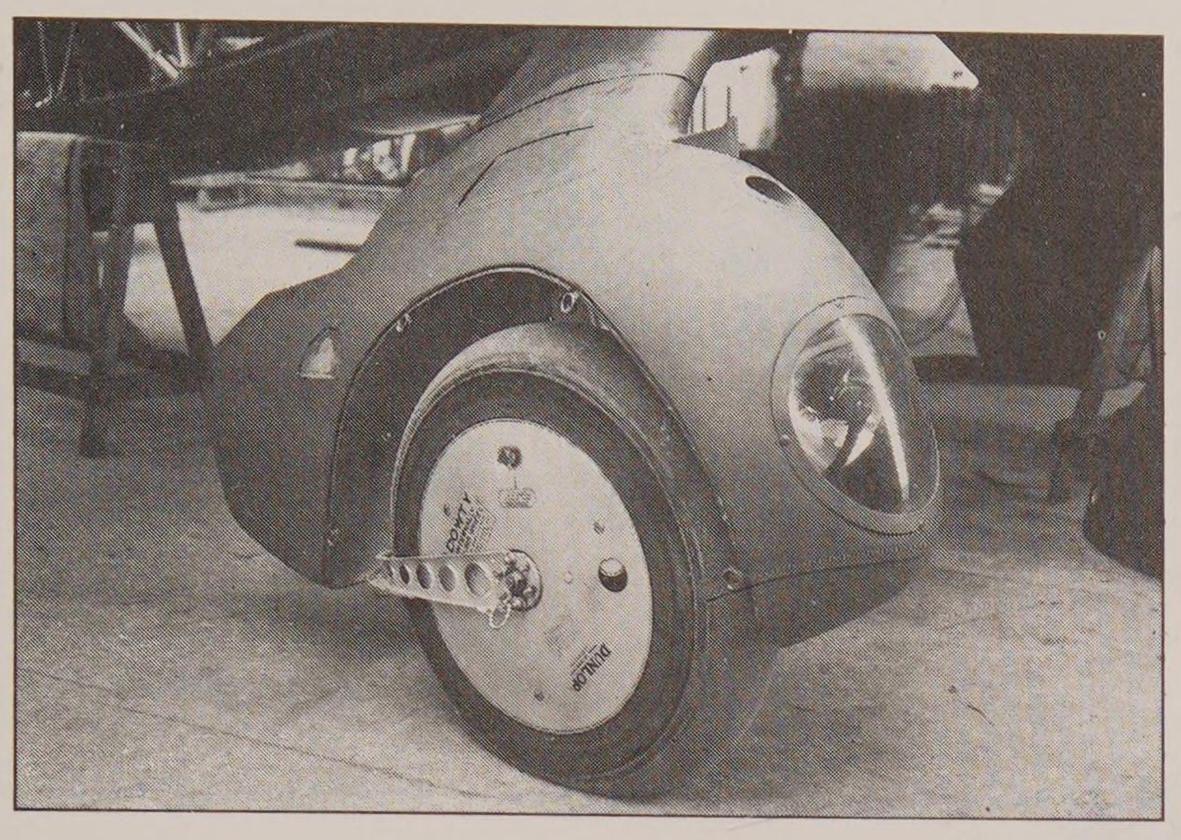


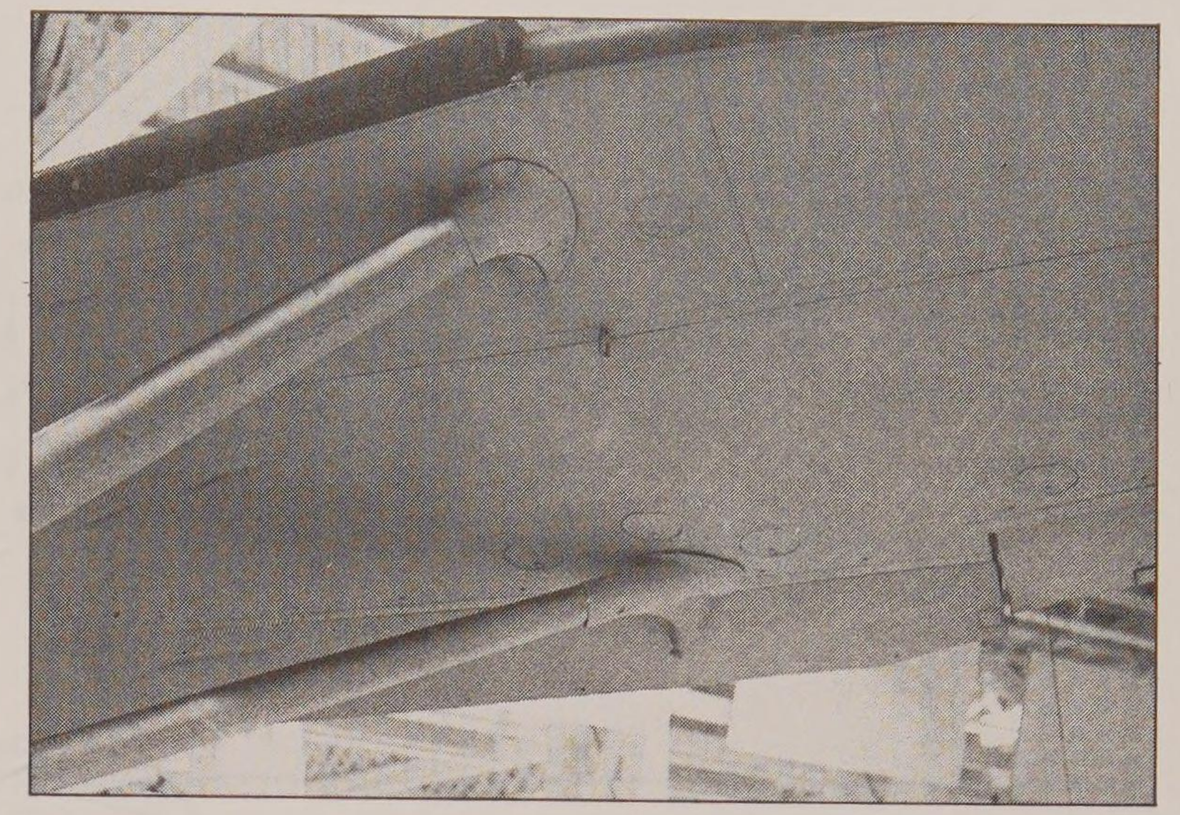
Scale
0 1 2 3 4 5 6 7 8 ft
0 1 2 m

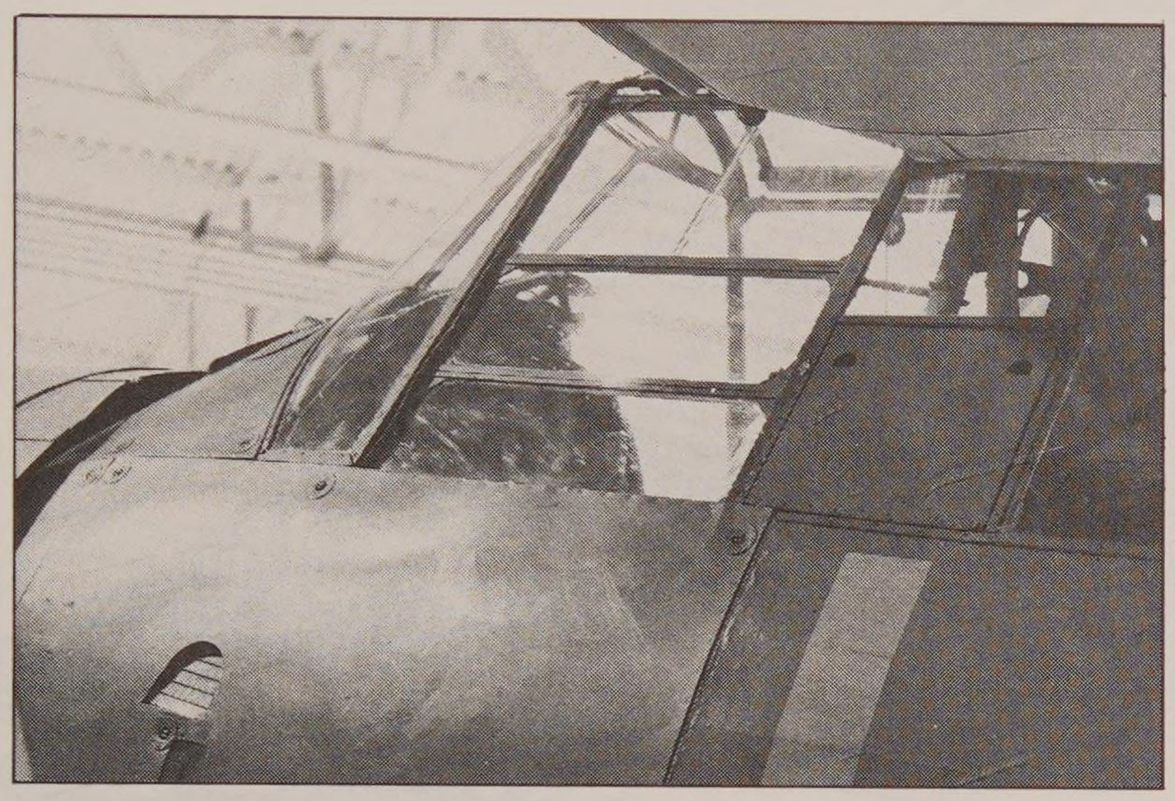
The fuselage structure laid bare, showing the U-section gusset plates forward and welded steel-tubing construction aft. Wooden stringers, not present here, formed the framework for the fabric covering.
▼

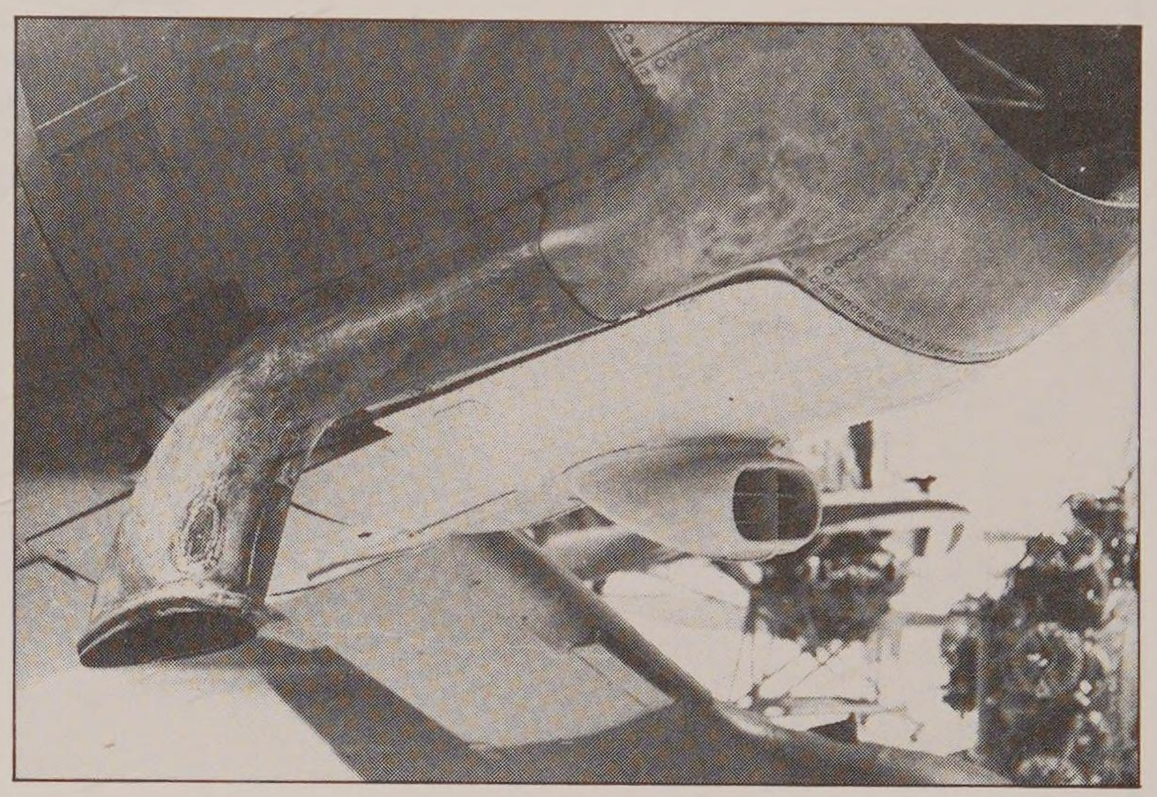
Close up views showing (clockwise from top left) starboard wheel spat and landing light; port wing strut attachment; exhaust pipe detail; and pilot's cockpit glazing, port side.►







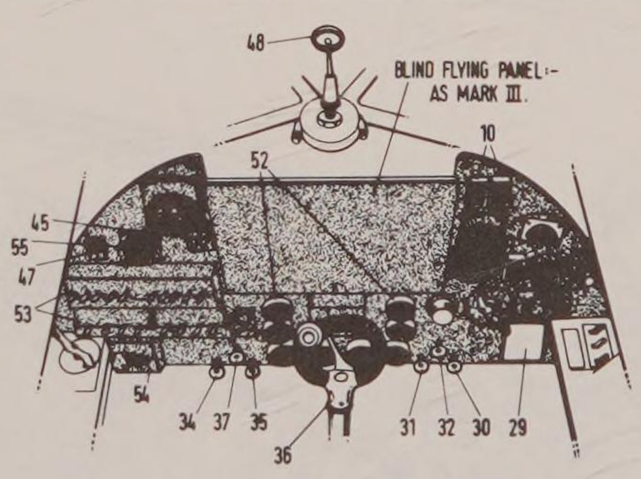




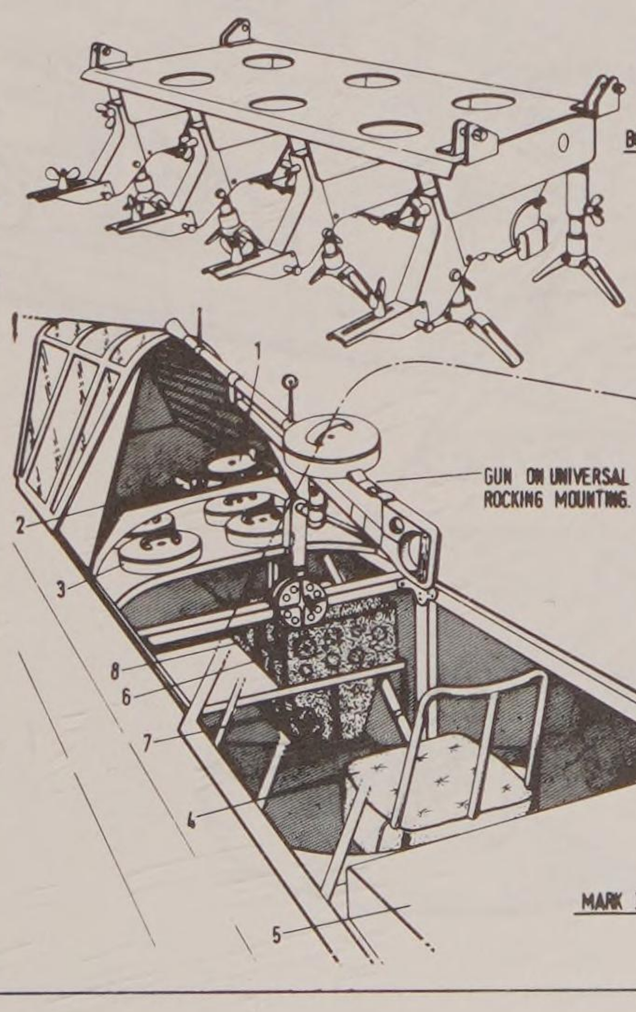
Sketch section

Key to cockpit and armament sketches

1. Aerial winch (trailing aerial). **2.** Barrel lock for machine gun. **3.** Spare ammunition containers. **4.** Swivelling seat. **5.** Chart table (fuel tank below). **6.** Radio. **7.** Camera. **8.** Battery. **9.** Pilot's seat pan (natural metal). **10.** Fuel pressure (green). **11.** Oil pressure (yellow). **12.** Boost-manifold pressure (red rim). **13.** Ammeter. **14.** Rev counter (black rim). **15.** Compass lamp switch. **16.** Pilot's services switches. **17.** Push button for gunner's warning lamp. **18.** Morse key. **19.** Cowl gills control. **20.** Seat raising wheel. **21.** TR9 radio control (Mk I only). **22.** Side window retracted. **23.** Leather padding. **24.** Tailplane trimmer control. **25.** Radio socket for helmet lead. **26.** Engine primer pump. **27.** Engine starting panel. **28.** Engine priming cock. **29.** Engine data plate. **30.** Air intake control. **31.** Cockpit heating control. **32.** Oil warming control. **33.** Oil temperature (yellow rim). **34.** Carburettor air control. **35.** Rudder bar adjustment. **36.** Control column (with brake lever and gun button). **37.** Propeller pitch control. **38.** Throttle lever. **39.** Mixture control. **40.** VHF radio selector. **41.** Landing lamp switch. **42.** Fuel cock. **43.** Fuel gauge. **44.** Oxygen control. **45.** Ignition switches. **46.** Air pressure gauge. **47.** Flare switch. **48.** Rear gun sight. **49.** Rudder pedals. **50.** Mount for reflector sight. **51.** Compass. **52.** Mounting position for eight Very light cartridges. **53.** Bomb selector switches. **54.** Bomb release lever and jettison switch. **55.** Clock.

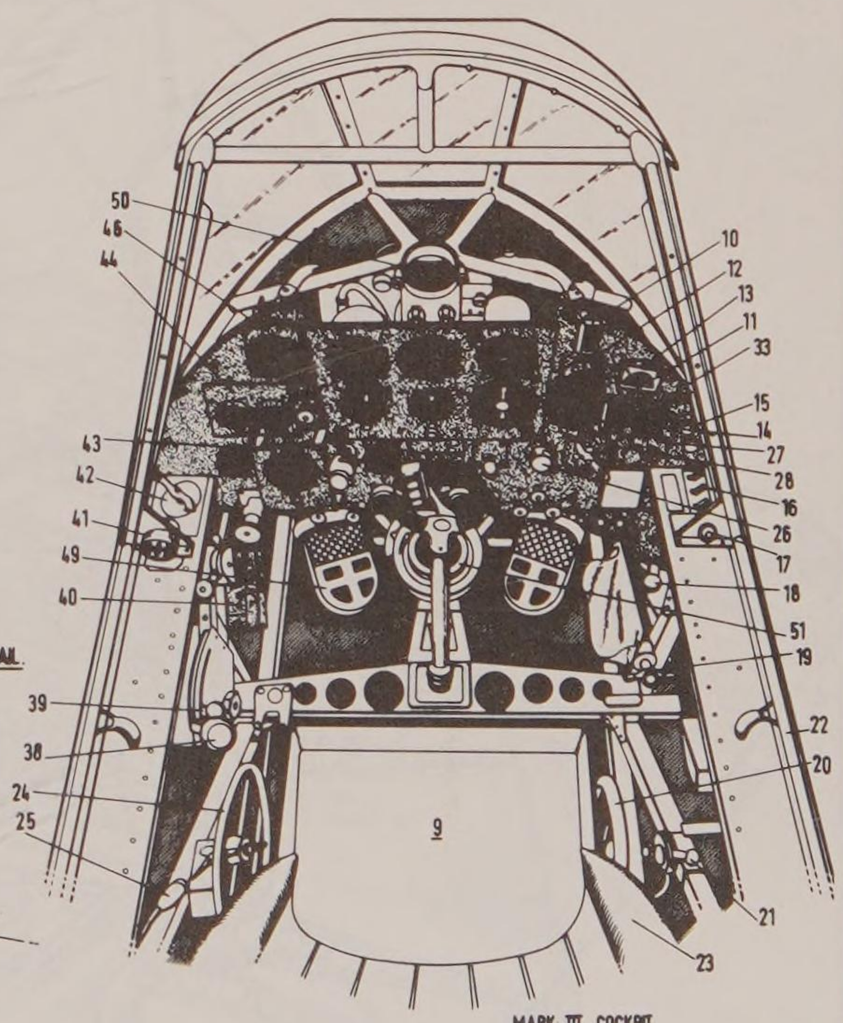


MARK I. PANEL.

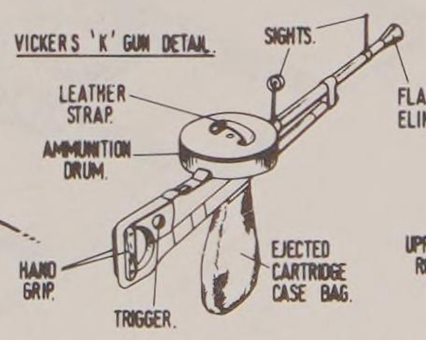


BOMB RACK DETAIL.

MARK I GUNNER'S COCKPIT.

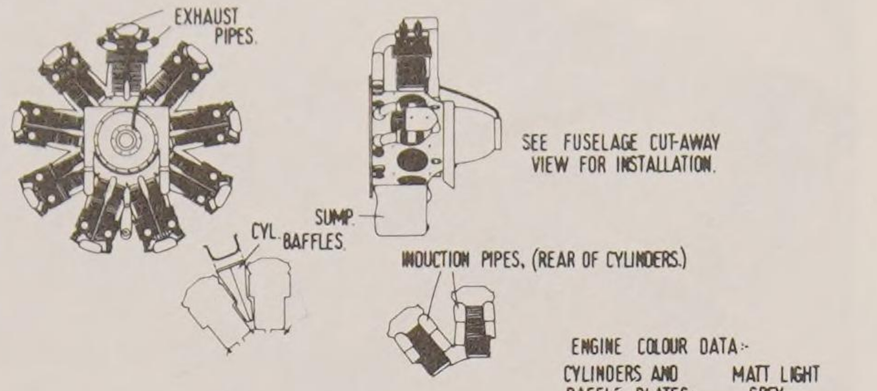


MARK III COCKPIT.
(ALL PANELS COLOURED DULL BLACK)
(COCKPIT INTERIOR IS MATT LIGHT GREEN.)

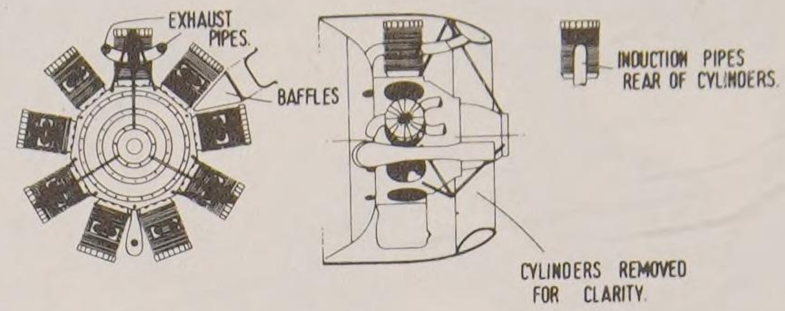


BLIND FLYING PANEL KEY.

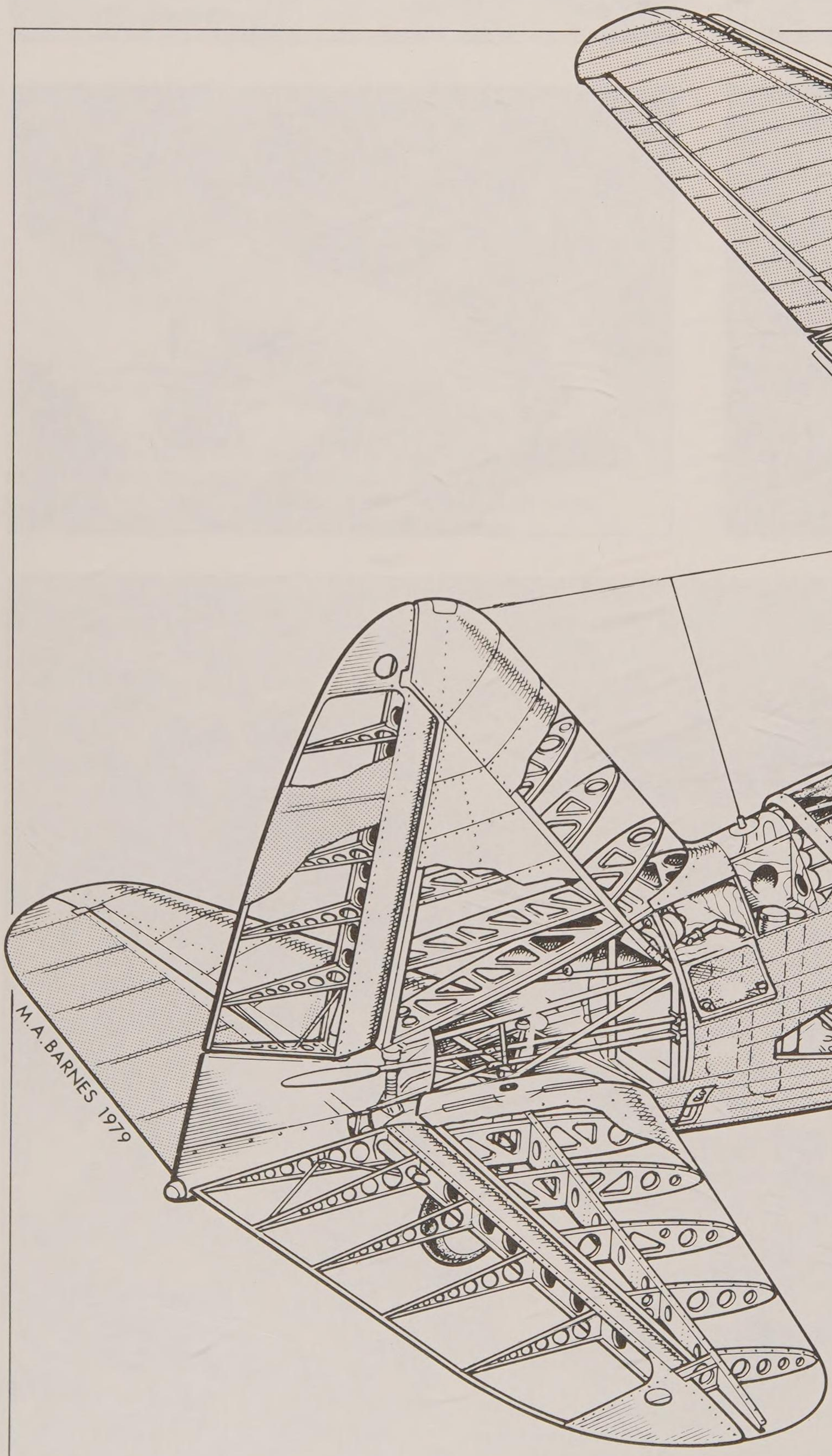
	LEFT.	CENTRE.	RIGHT.
UPPER ROW.	AIRSPEED INDICATOR.	ARTIFICIAL HORIZON.	CLIMB/DESCENT.
LOWER ROW.	ALTIMETER.	DIRECTION GYRO.	TURN/SLIP.

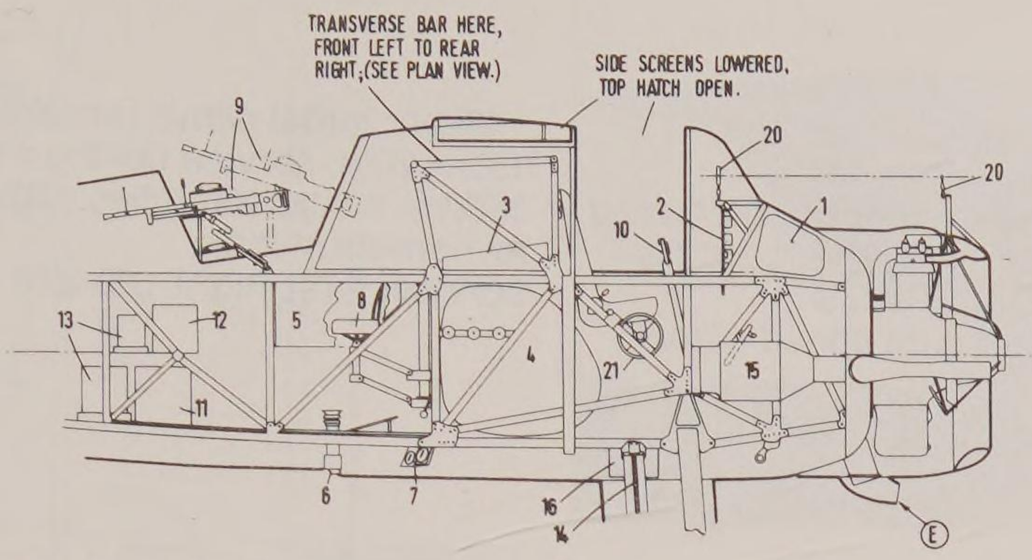


Scrap views, Mks I and III ▲
Mercury engine



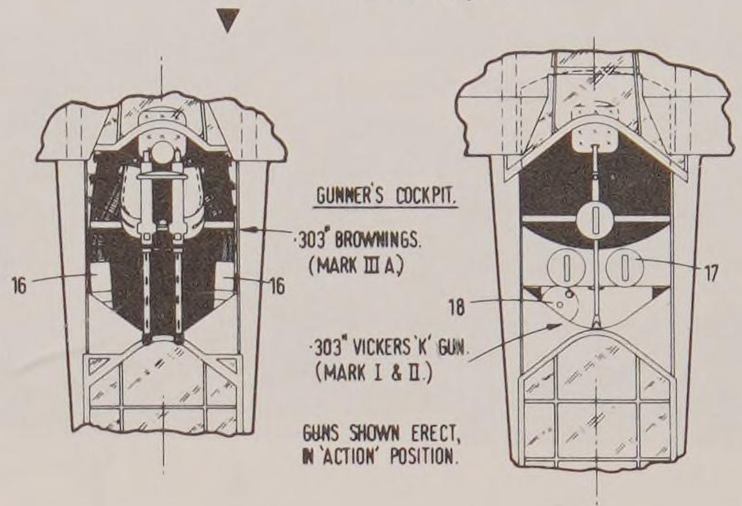
▲ Scrap views, Mk II
Perseus engine



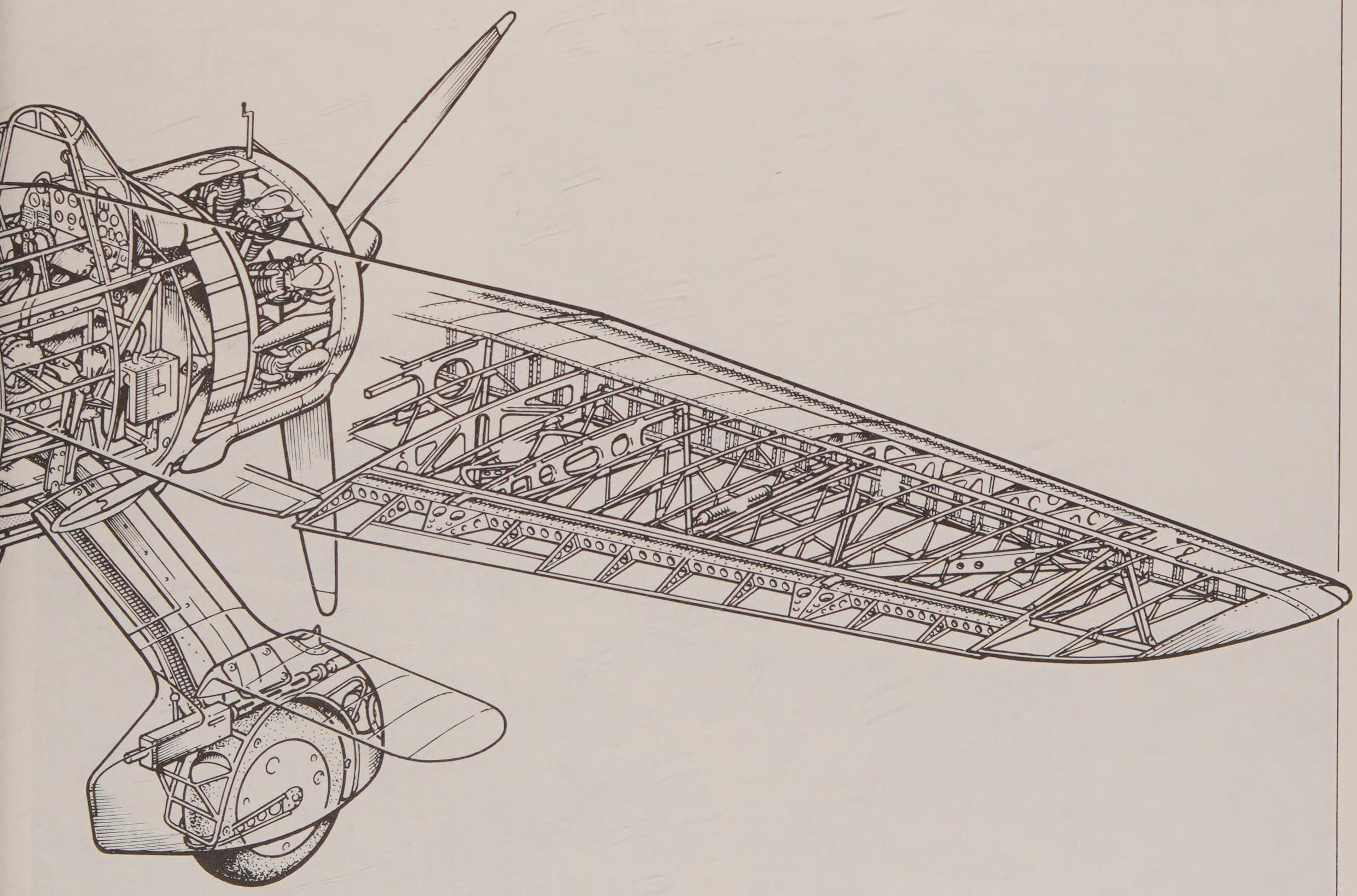


Scrap inboard profile ▲
Starboard side

Scrap plan views
Gunner's cockpit
▼



Cutaway drawing
By Tony Barnes

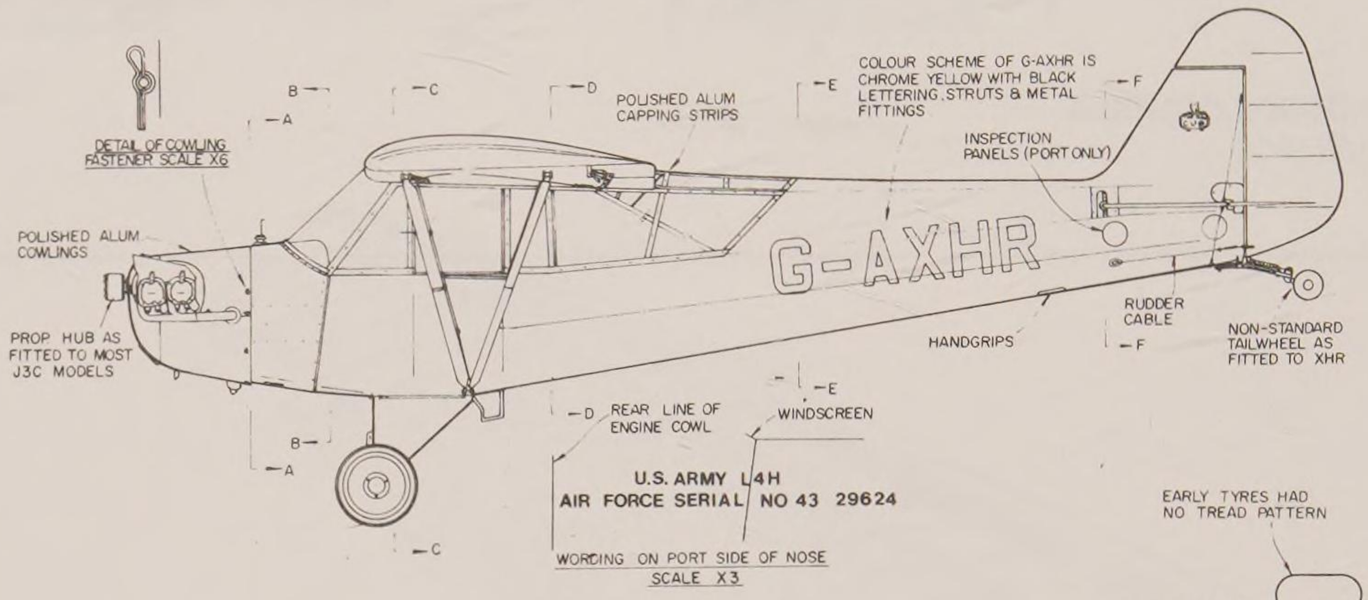


Piper J3C Cub

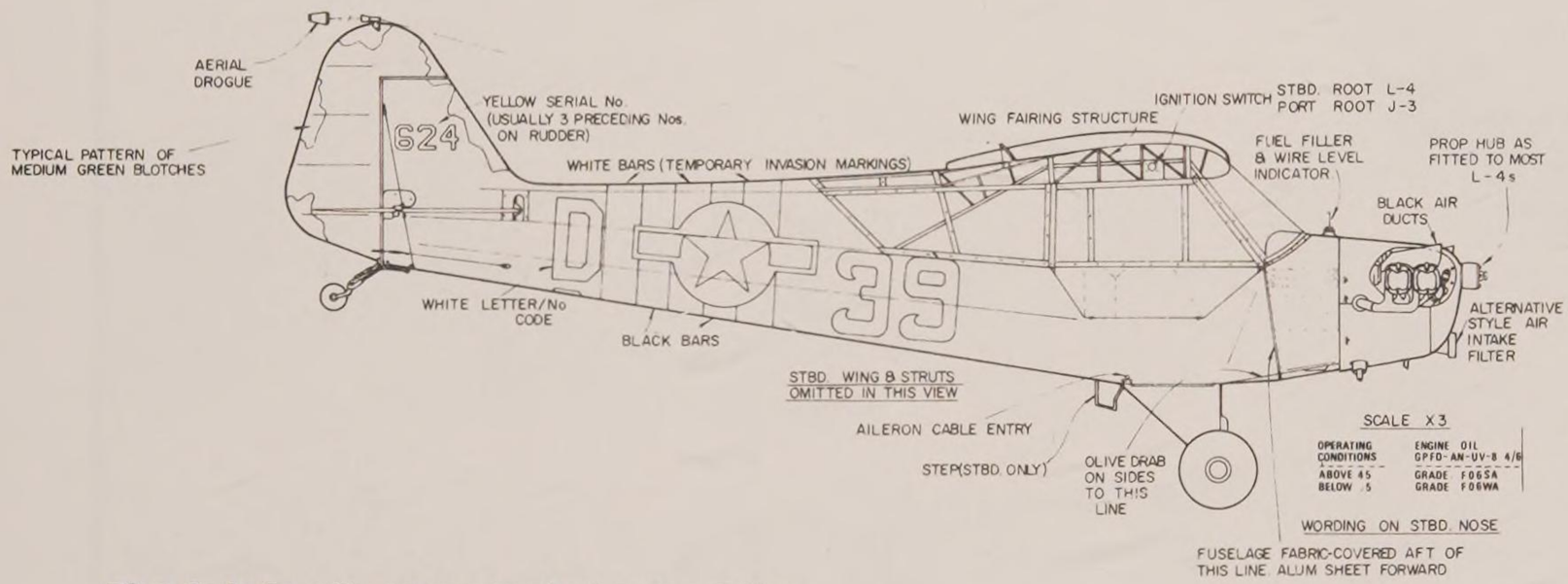
Country of origin: USA.
Type: Two-seat, land-based trainer.
Dimensions: Wing span 35ft 2½in *10.73m*; length 22ft 4½in *6.82m*; height 6ft 8in *2.03m*; wing area 178.5 sq ft *16.58m²*.

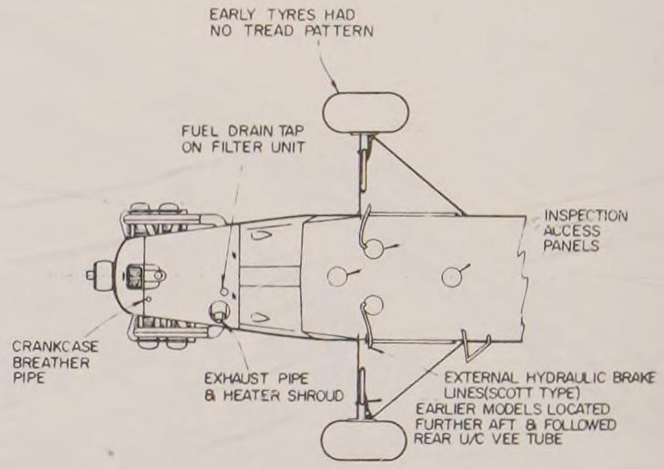
Weights: Empty 680lb *308kg*; loaded 1220lb *553kg*.
Powerplant: One Continental, Lycoming or Franklin four-cylinder, horizontally opposed engine rated at 65hp.
Performance: Maximum speed 87mph *140kph*; initial climb rate 450ft/min *135m/min*; service ceiling 11,500ft *3500m*; range 206 miles *330km*.
Armament: None.
Service: First flight (J3) late 1937.

Port elevation ▶


DETAIL OF COWLING FASTENER SCALE X6
POLISHED ALUM CAPPING STRIPS
COLOUR SCHEME OF G-AXHR IS CHROME YELLOW WITH BLACK LETTERING, STRUTS & METAL FITTINGS
INSPECTION PANELS (PORT ONLY)
POLISHED ALUM COWLINGS
G-AXHR
PROP HUB AS FITTED TO MOST J3C MODELS
RUDDER CABLE
HANDGRIPS
NON-STANDARD TAILWHEEL AS FITTED TO XHR
REAR LINE OF ENGINE COWL
WINDSCREEN
U.S. ARMY L4H
AIR FORCE SERIAL NO 43 29624
WORDING ON PORT SIDE OF NOSE
SCALE X3

Starboard elevation
Wing omitted to show structure
▼


AERIAL DROGUE
YELLOW SERIAL No. (USUALLY 3 PRECEDING Nos. ON RUDDER)
624
TYPICAL PATTERN OF MEDIUM GREEN BLOTCHES
WHITE BARS (TEMPORARY INVASION MARKINGS)
WING FAIRING STRUCTURE
IGNITION SWITCH
STBD. ROOT L-4
PORT ROOT J-3
FUEL FILLER & WIRE LEVEL INDICATOR
PROP HUB AS FITTED TO MOST L-4s
BLACK AIR DUCTS
ALTERNATIVE STYLE AIR INTAKE FILTER
WHITE LETTER/No CODE
BLACK BARS
STBD WING & STRUTS OMITTED IN THIS VIEW
AILERON CABLE ENTRY
STEP(STBD ONLY)
OLIVE DRAB ON SIDES TO THIS LINE
SCALE X3
OPERATING CONDITIONS
ENGINE OIL GPFO-AN-UV-8 4/6
ABOVE 45 GRADE F06SA
BELOW 45 GRADE F06WA
WORDING ON STBD NOSE
FUSELAGE FABRIC-COVERED AFT OF THIS LINE. ALUM SHEET FORWARD

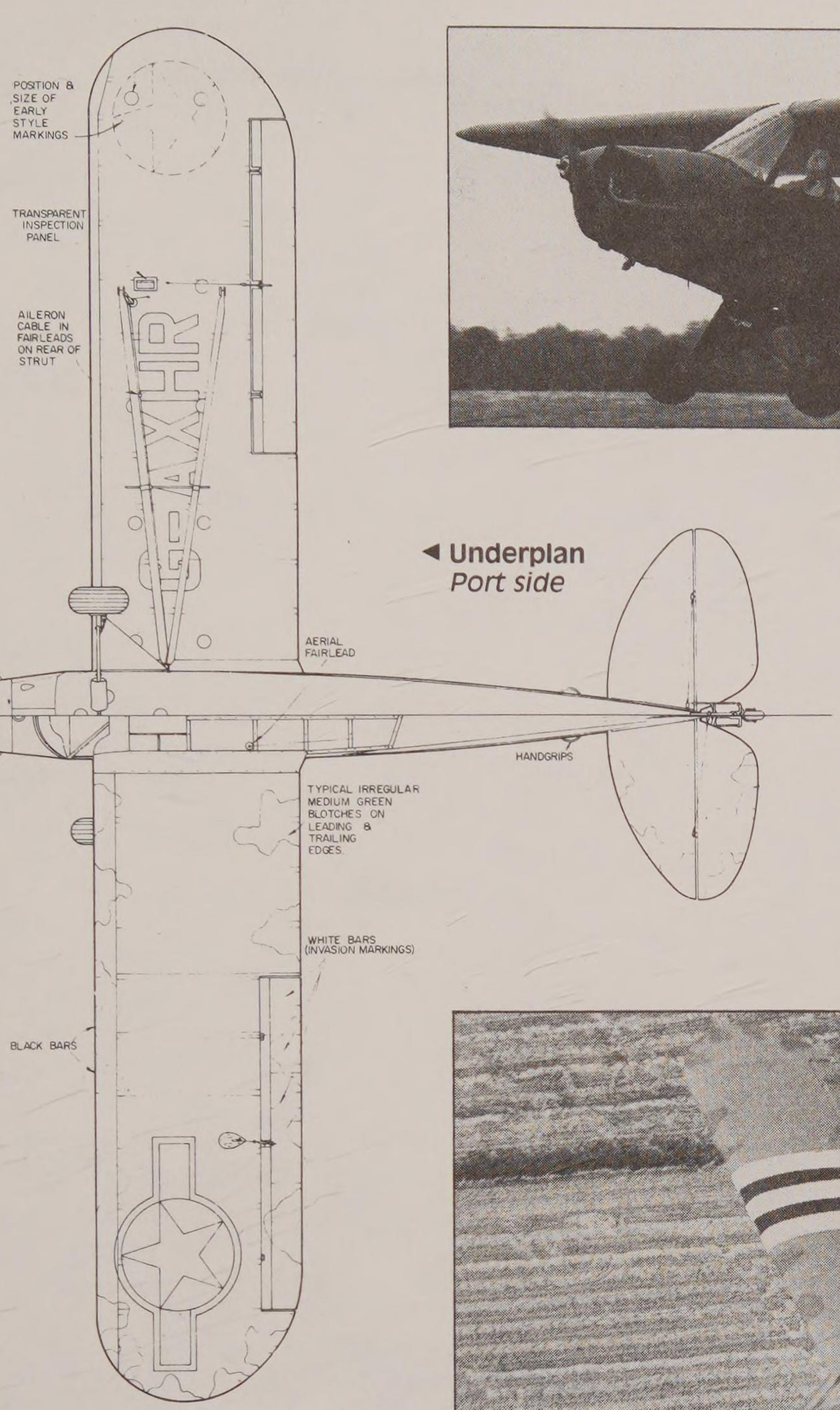

EARLY TYRES HAD NO TREAD PATTERN
FUEL DRAIN TAP ON FILTER UNIT
INSPECTION ACCESS PANELS
CRANKCASE BREATHER PIPE
EXHAUST PIPE & HEATER SHROUD
EXTERNAL HYDRAULIC BRAKE LINES(SCOTT TYPE)
EARLIER MODELS LOCATED FURTHER AFT & FOLLOWED REAR U/C VEE TUBE

▲
Scrap underplan
Axles, shock absorbers and cabane struts omitted

DRAWN BY MAURICE BRETT

The Cub family represented one of the most popular light aircraft designs of all time, the basic 40hp version originally selling for a mere $995! This is a US Army L-4. (M Brett)
▼

▲
Early-production L-4A, its serial number displayed on a piece of paper stuck inside the rear glazing! Just visible is the generator mounted centrally on the undercarriage struts. (M Brett)

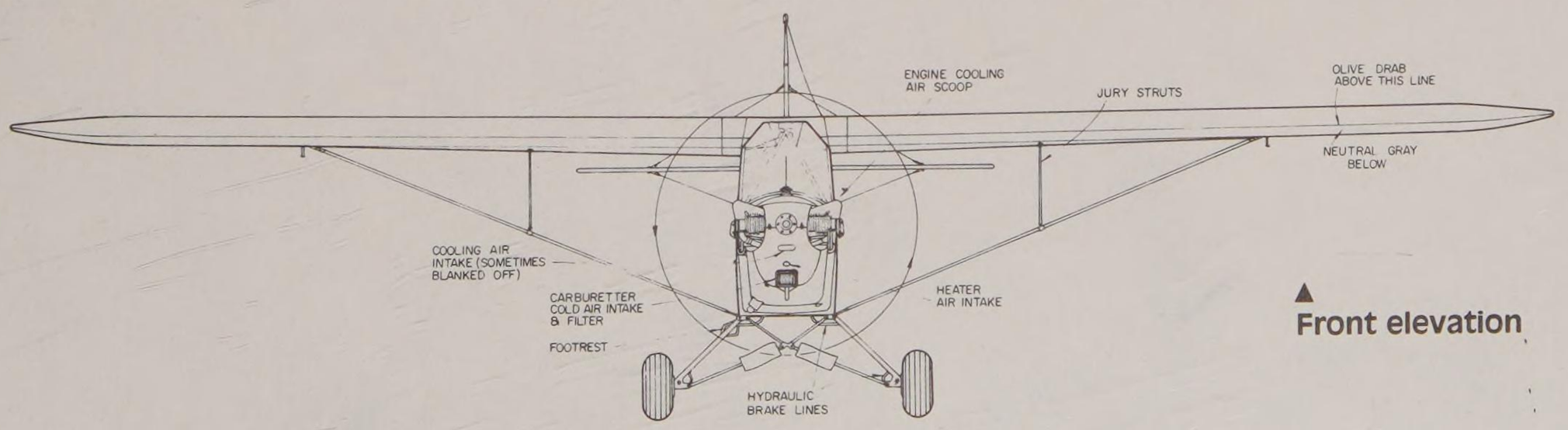

POSITION & SIZE OF EARLY STYLE MARKINGS
TRANSPARENT INSPECTION PANEL
AILERON CABLE IN FAIRLEADS ON REAR OF STRUT
AERIAL FAIRLEAD
HANDGRIPS
TYPICAL IRREGULAR MEDIUM GREEN BLOTCHES ON LEADING & TRAILING EDGES
WHITE BARS (INVASION MARKINGS)
BLACK BARS

◄ **Underplan**
Port side

Restored L-4H with D-Day invasion stripes and typical US Army scheme of OD overall with Medium Green patches along leading and trailing edges of flying surfaces.
▼

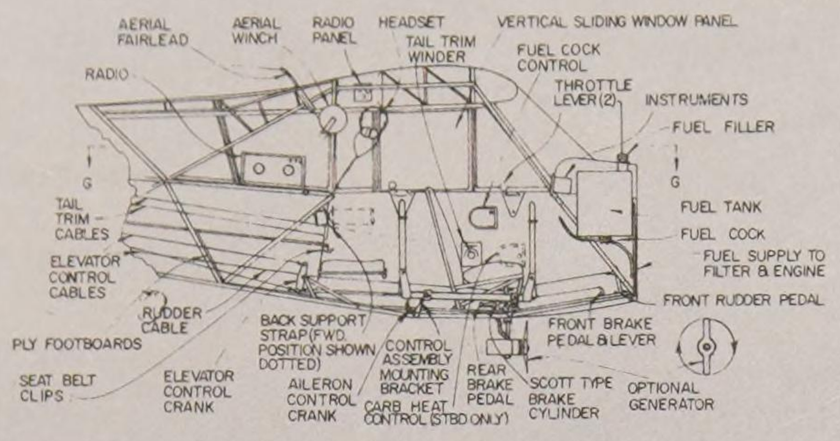
▲
Plan view
Port side

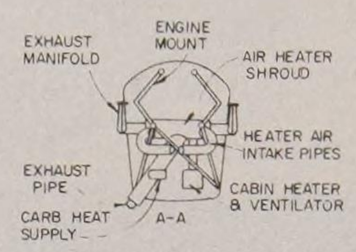
Scale
0 1 2 3 4 5 6 7 8 ft
0 1 2 m

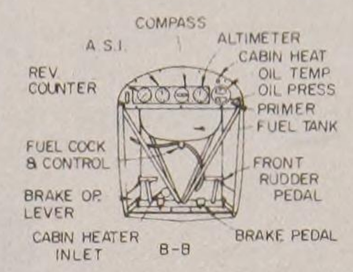


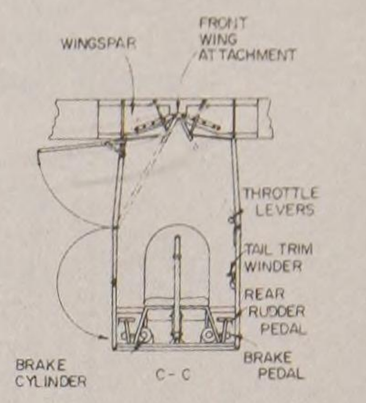
▲
Front elevation

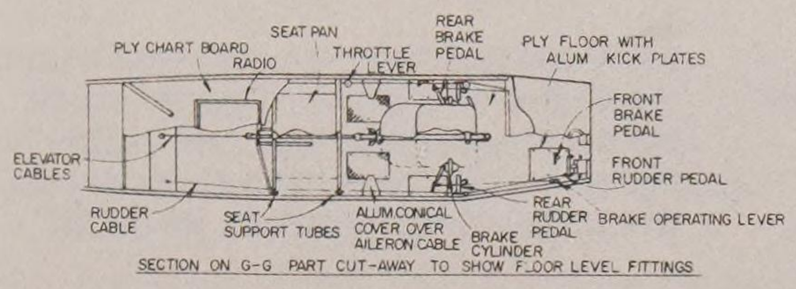
Fuselage cross-sections



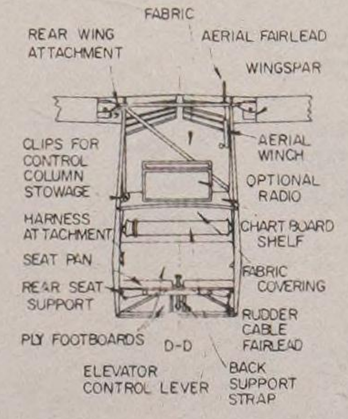


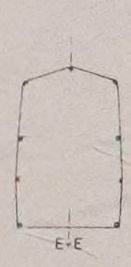


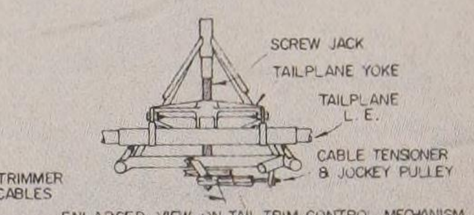




SECTION ON G-G PART CUT-AWAY TO SHOW FLOOR LEVEL FITTINGS







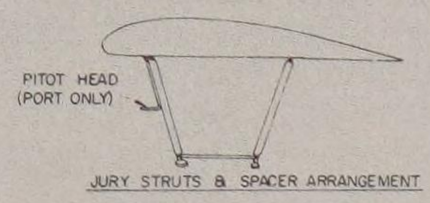
ENLARGED VIEW ON TAIL TRIM CONTROL MECHANISM SEE SECTION F-F

▲
Scrap views
Interior details

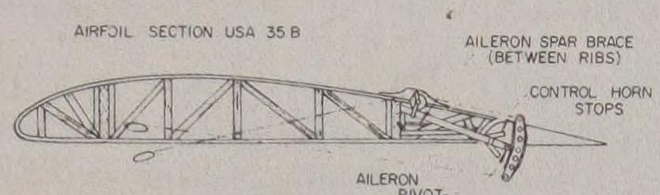
Piper O-59 Cub photographed in May 1943. Early civilian Cubs had less extensive glazing, and none at all above the heads of the crew. (Crown Copyright)
▼

Scale

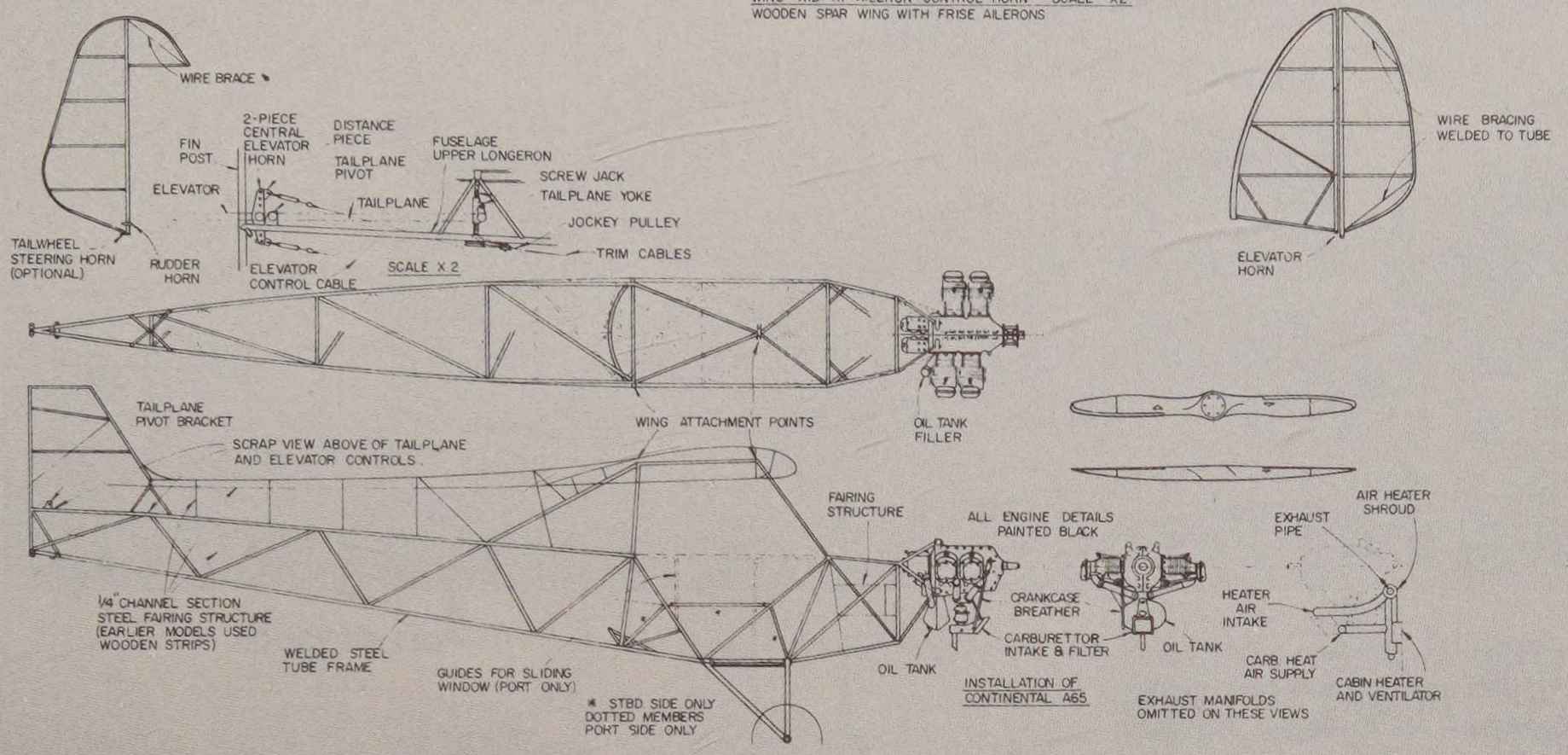
Wing cross-sections

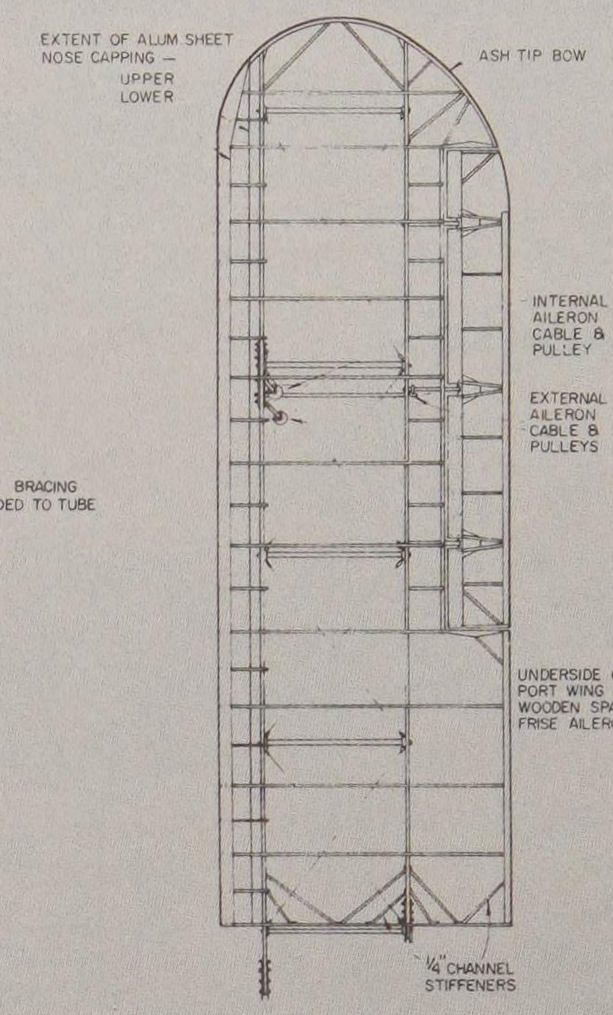


JURY STRUTS & SPACER ARRANGEMENT



WING RIB AT AILERON CONTROL HORN SCALE X2
WOODEN SPAR WING WITH FRISE AILERONS



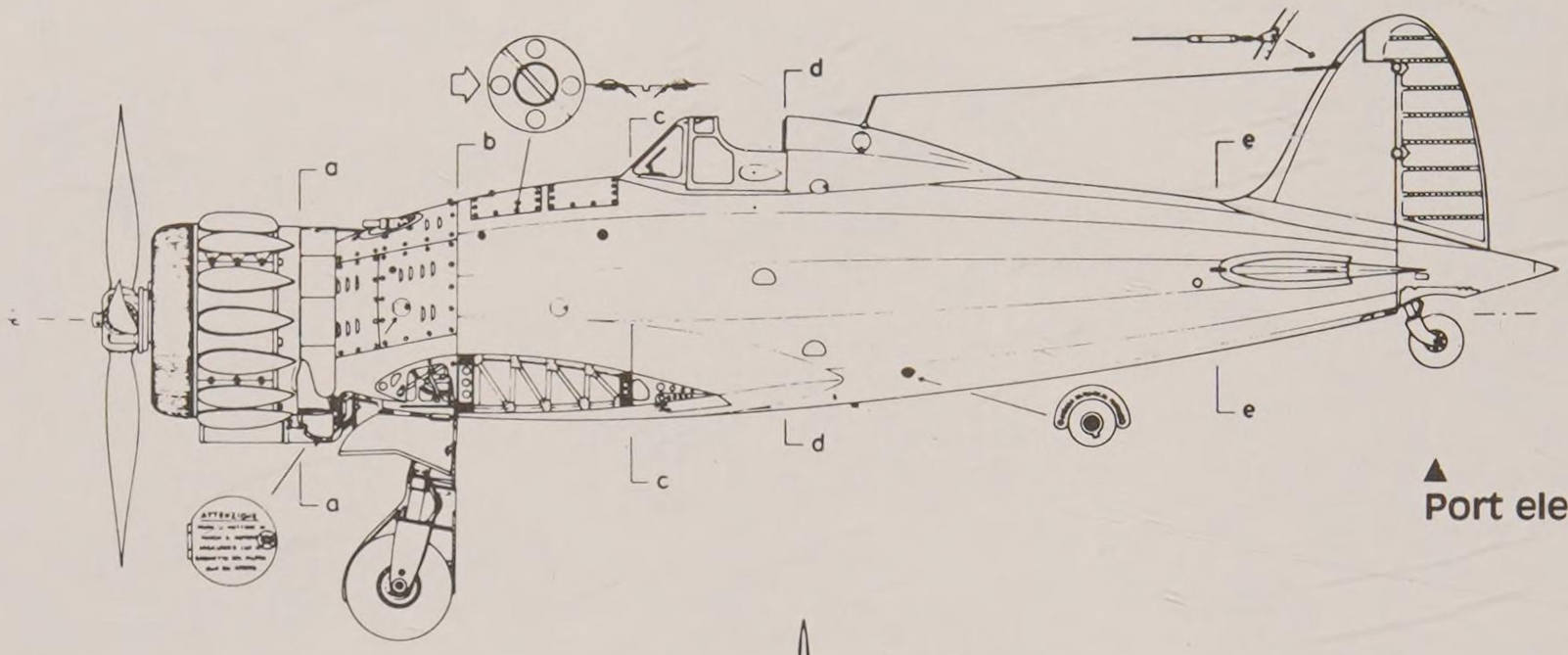


Scrap views

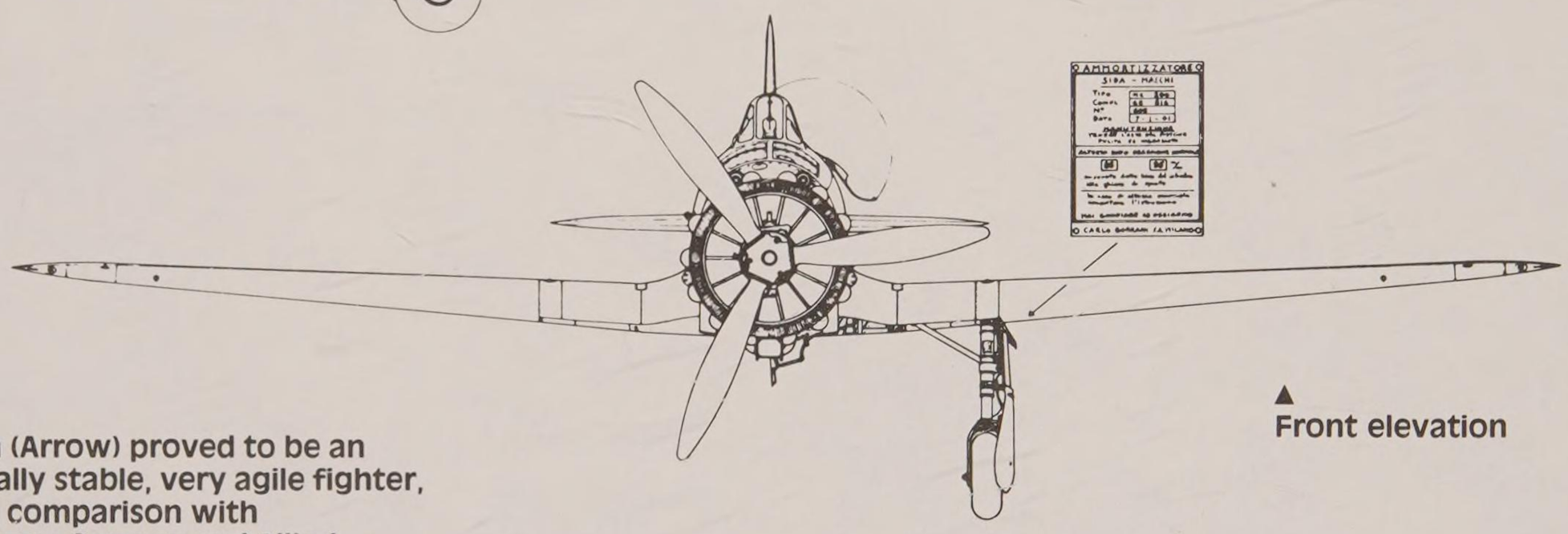
Fuselage structure and engine details

Macchi C200 Saetta

Country of origin: Italy.
Type: Single-seat, land-based fighter.
Dimensions: Wing span 34ft 8½in *10.58m*; length 26ft 10½in *8.20m*; height 11ft 6in *3.51m*; wing area 180.8 sq ft *16.8m²*.
Weights: Empty 3903lb *1770kg*; loaded 4851lb *2200kg*.
Powerplant: One Fiat A74 RC.38 radial engine rated at 840hp.
Performance: Maximum speed 303mph *488kph* at 15,000ft *4570m*; time to 3280ft *1000m*, 1.05min; service ceiling 33,000ft *10,060m*; range (normal) 354 miles *570km*.
Armament: Two fixed 12.7mm Breda-SAFAT machine guns, plus (late models) two fixed 7.7mm machine guns.
Service: First flight (prototype) 24 December 1937; service entry autumn 1939.

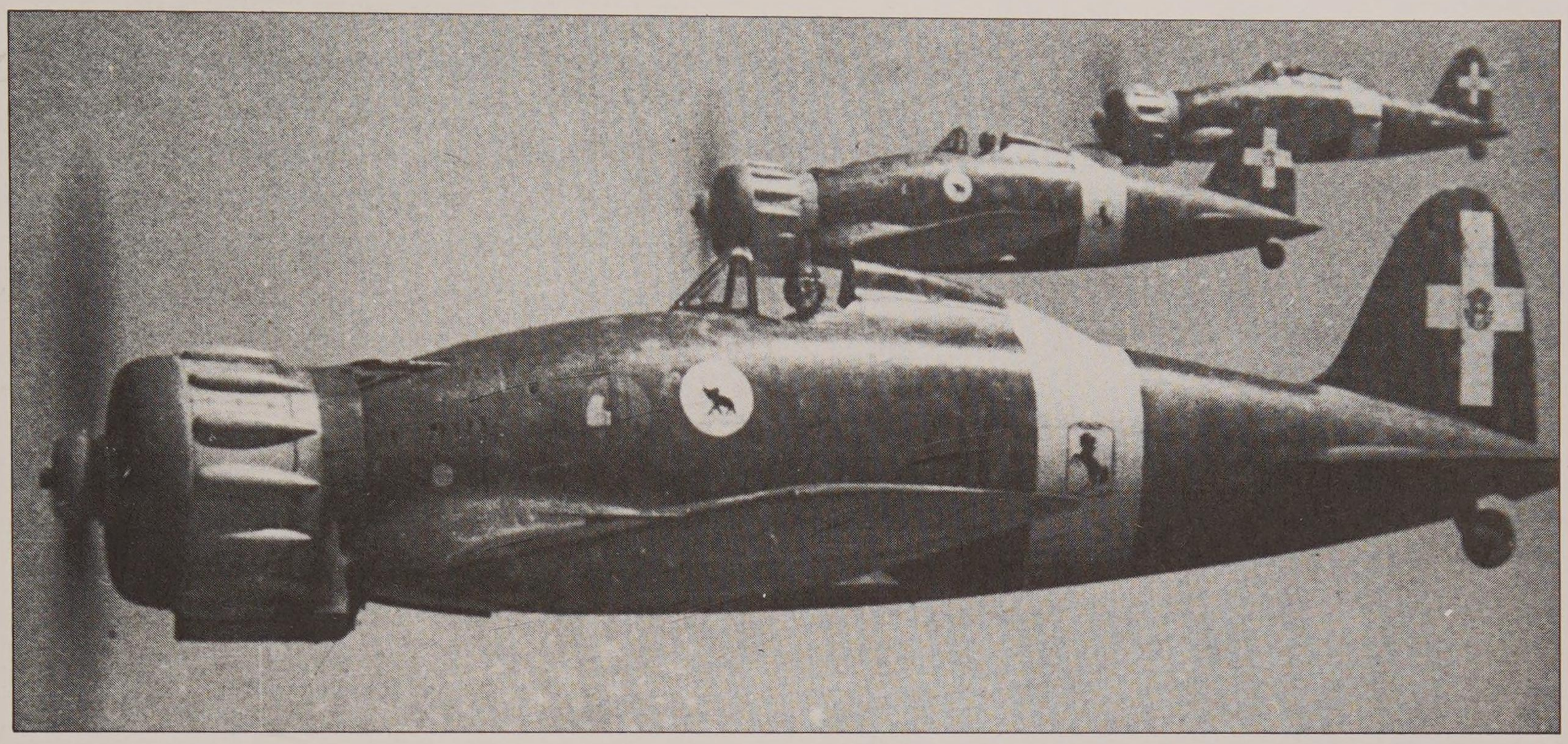


▲
Port elevation

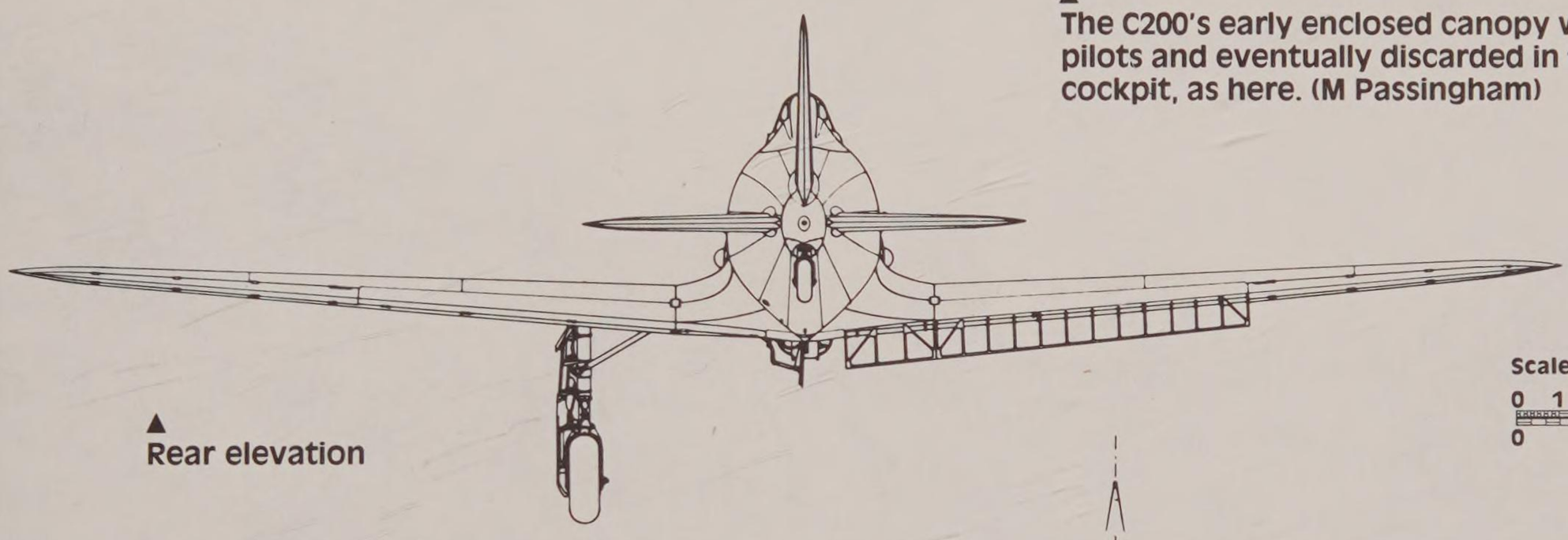


▲
Front elevation

The Saetta (Arrow) proved to be an exceptionally stable, very agile fighter, though, in comparison with contemporary German and Allied types, underarmed. (M Passingham)
▼

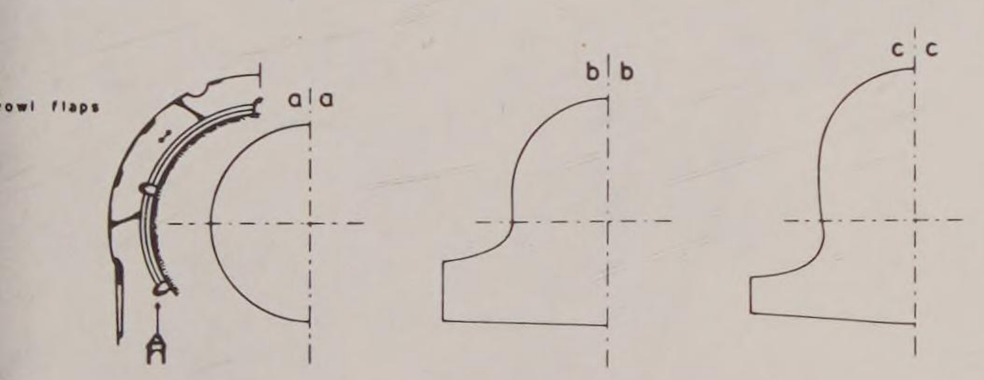


▲
The C200's early enclosed canopy was disliked by Italian pilots and eventually discarded in favour of a semi-open cockpit, as here. (M Passingham)

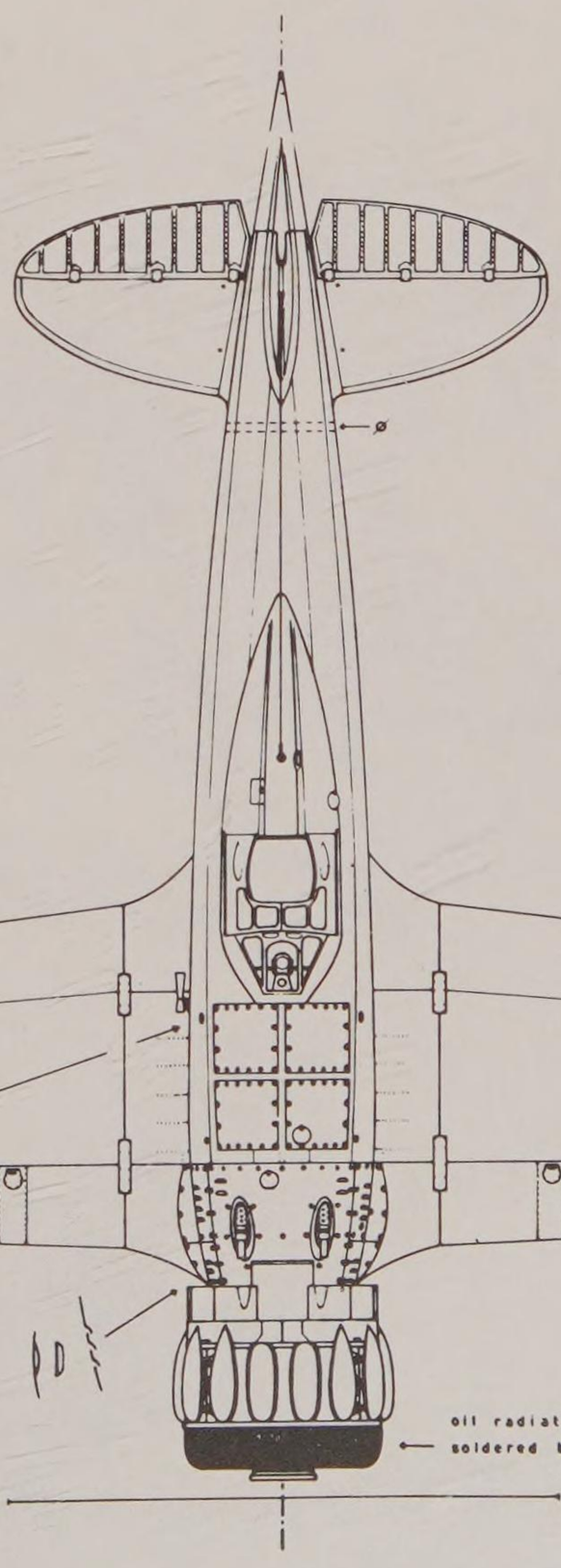


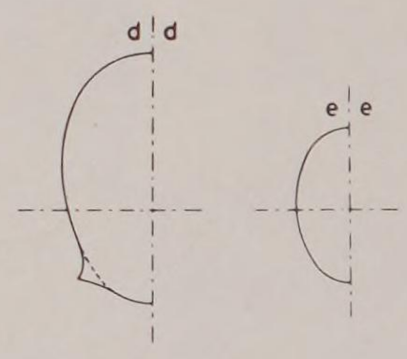
▲
Rear elevation

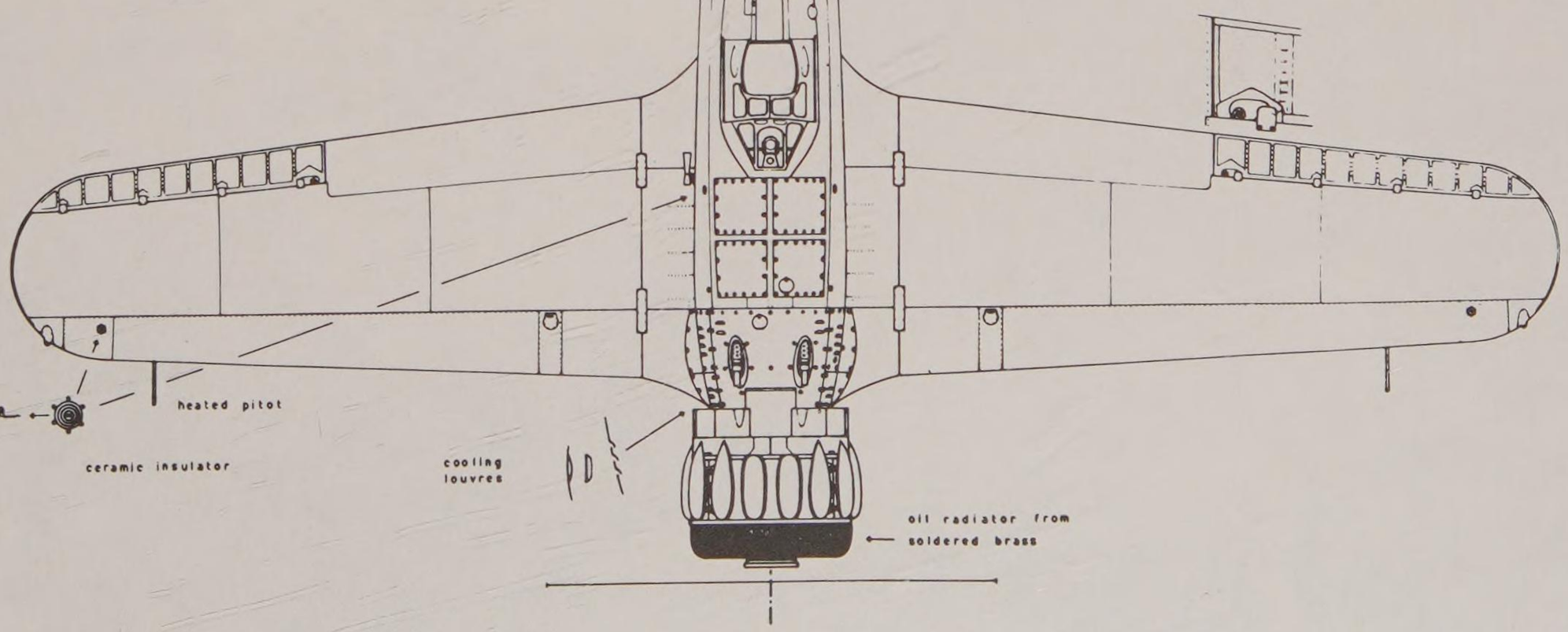
Scale
0 1 2 3 4 5 6 7 8 ft
0 1 2 m



▲
Fuselage cross-sections



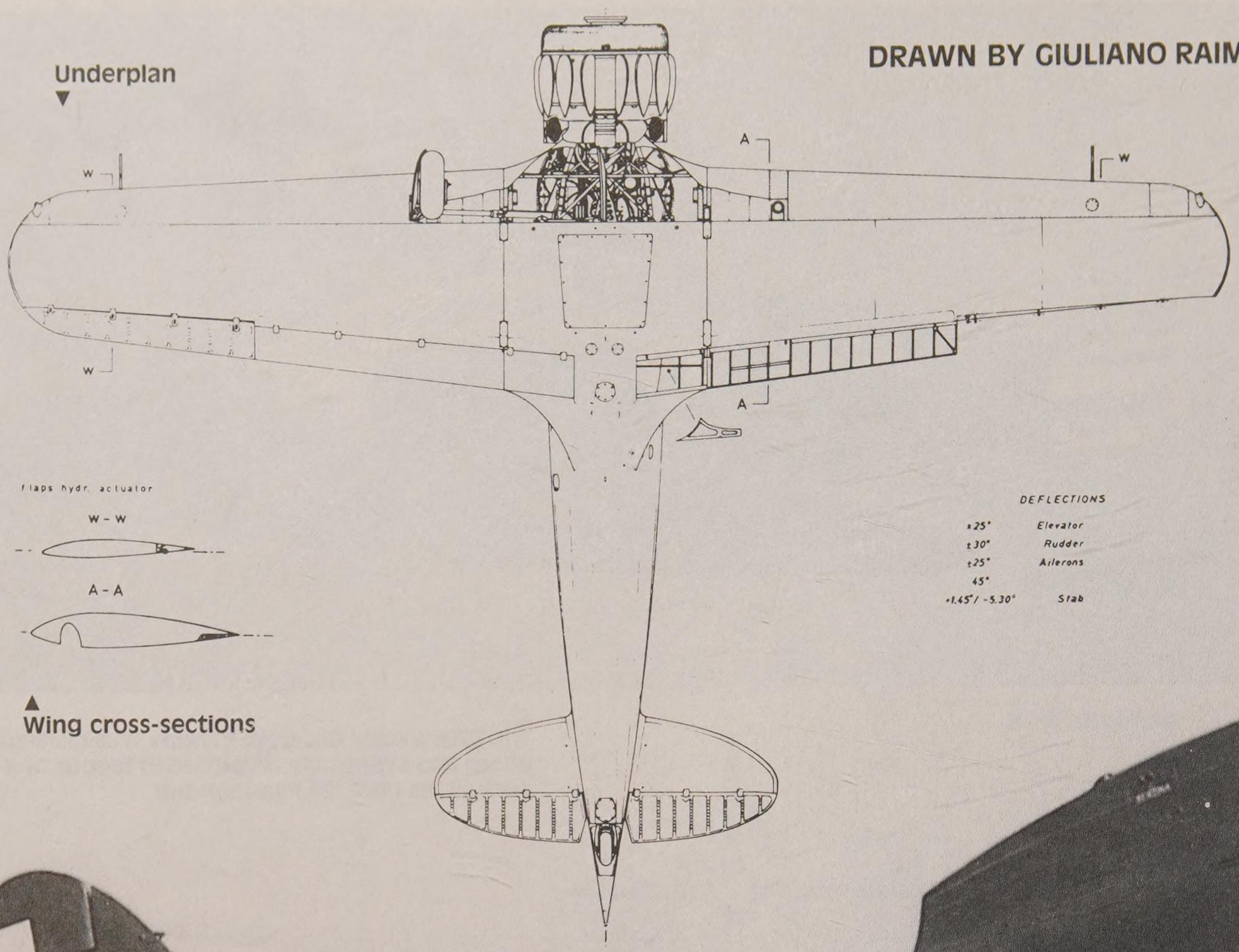




Plan view ▼

DRAWN BY GIULIANO RAIMONDI

Underplan
▼



flaps hydr. actuator

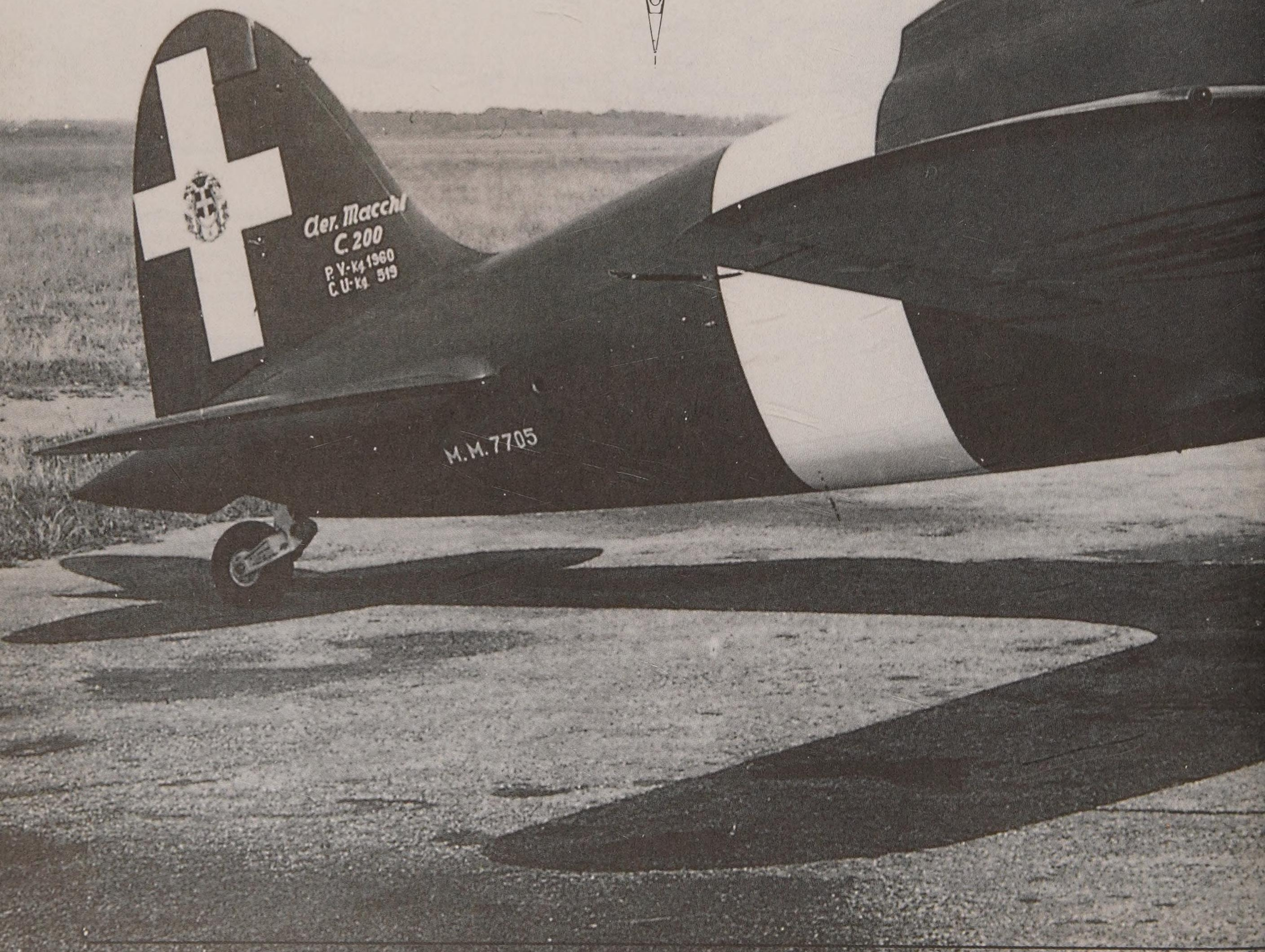
W - W

A - A

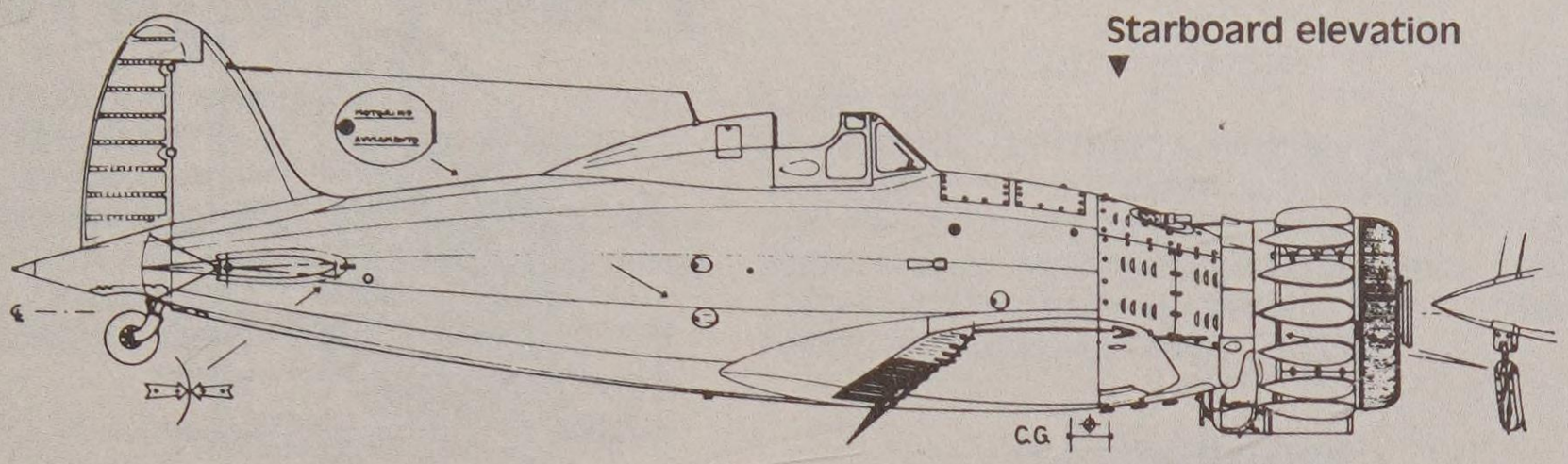
▲
Wing cross-sections

DEFLECTIONS

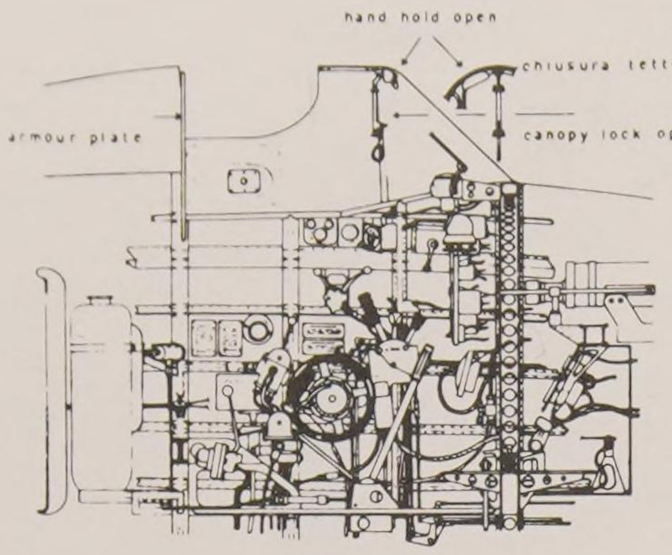
±25°	Elevator
±30°	Rudder
±25°	Ailerons
45°	
+1.45° / -5.30°	Stab

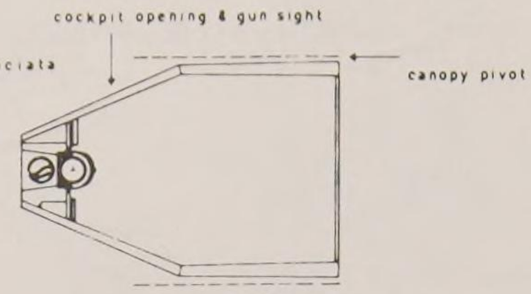


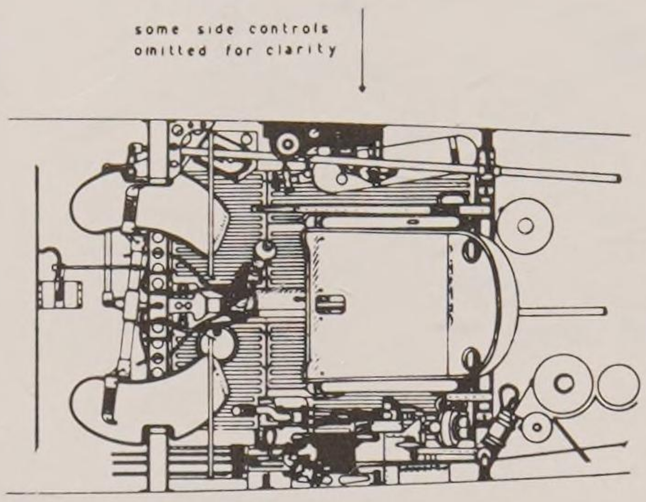
Starboard elevation
▼

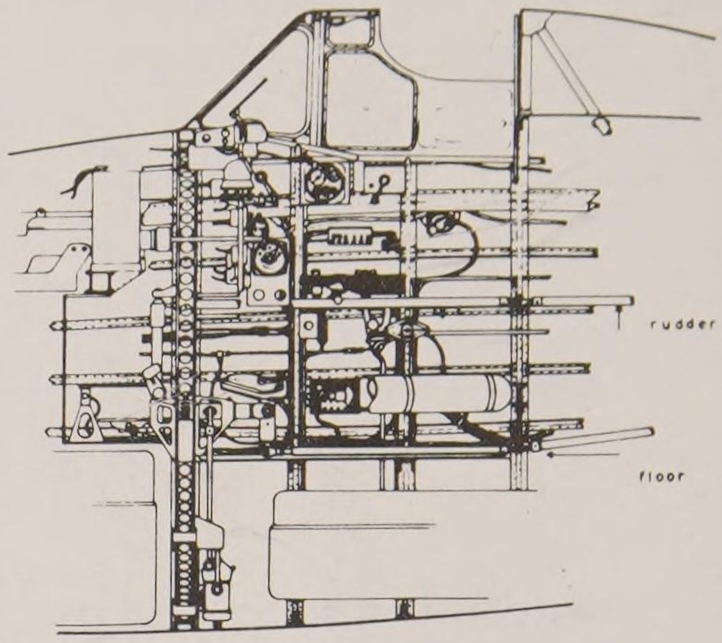


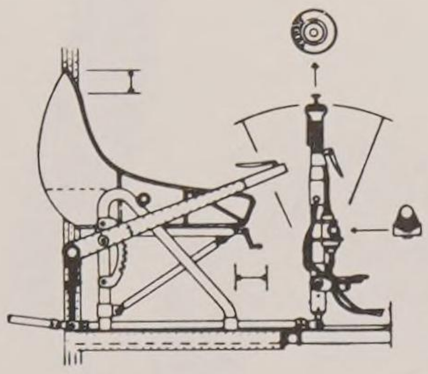
Late-production Saetta in pristine, factory finish of dark green and light grey, with yellow cowling and white fuselage band. (Pilot Press)
▼

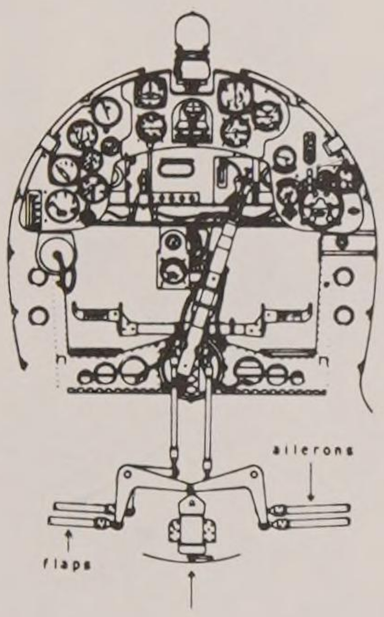


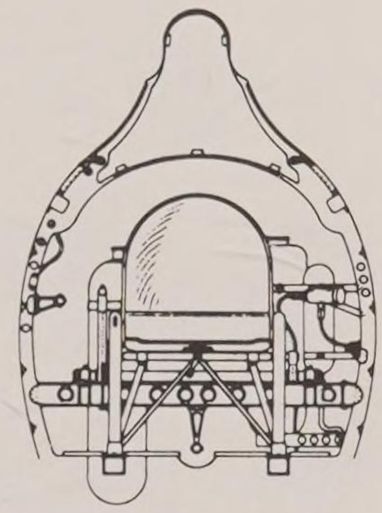


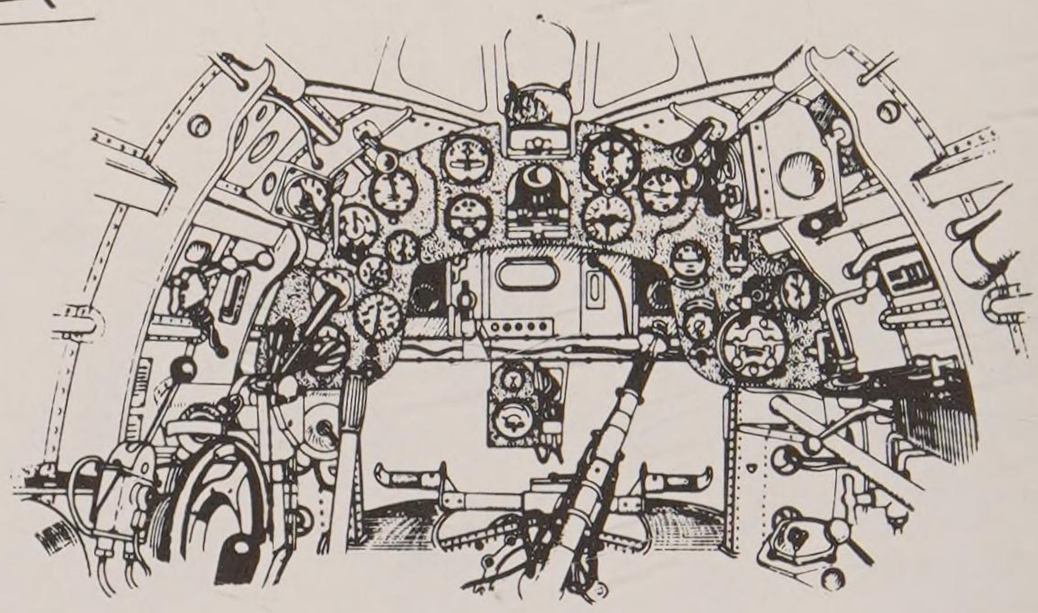






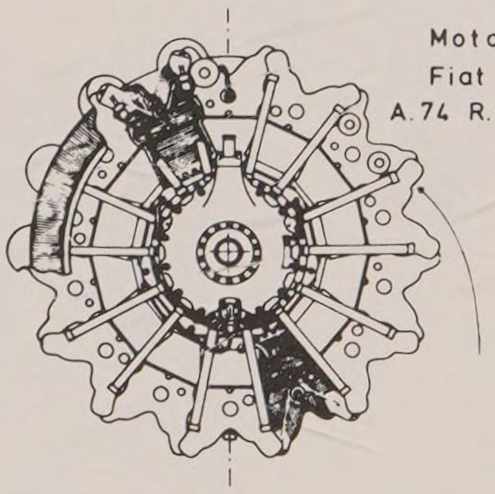


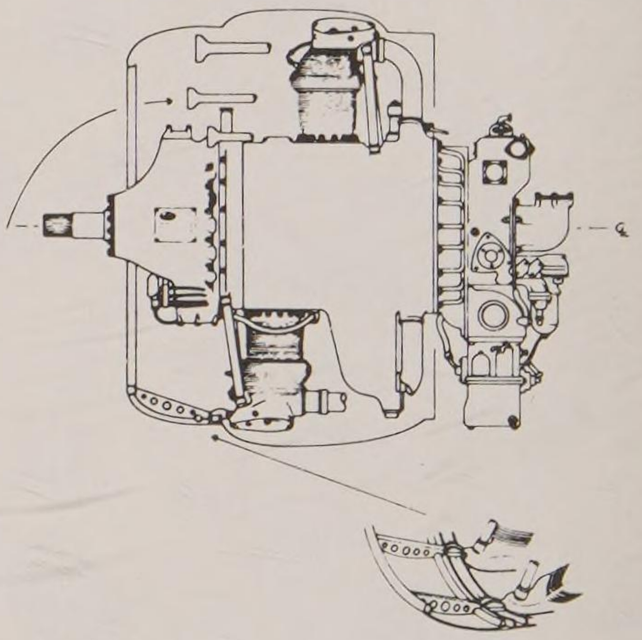


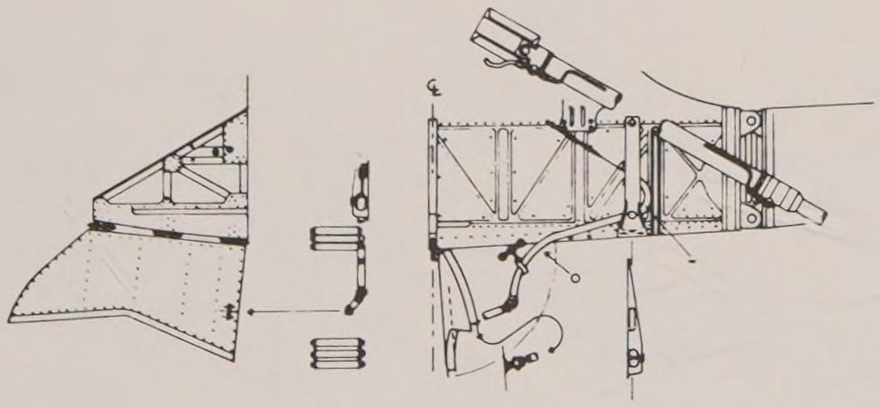


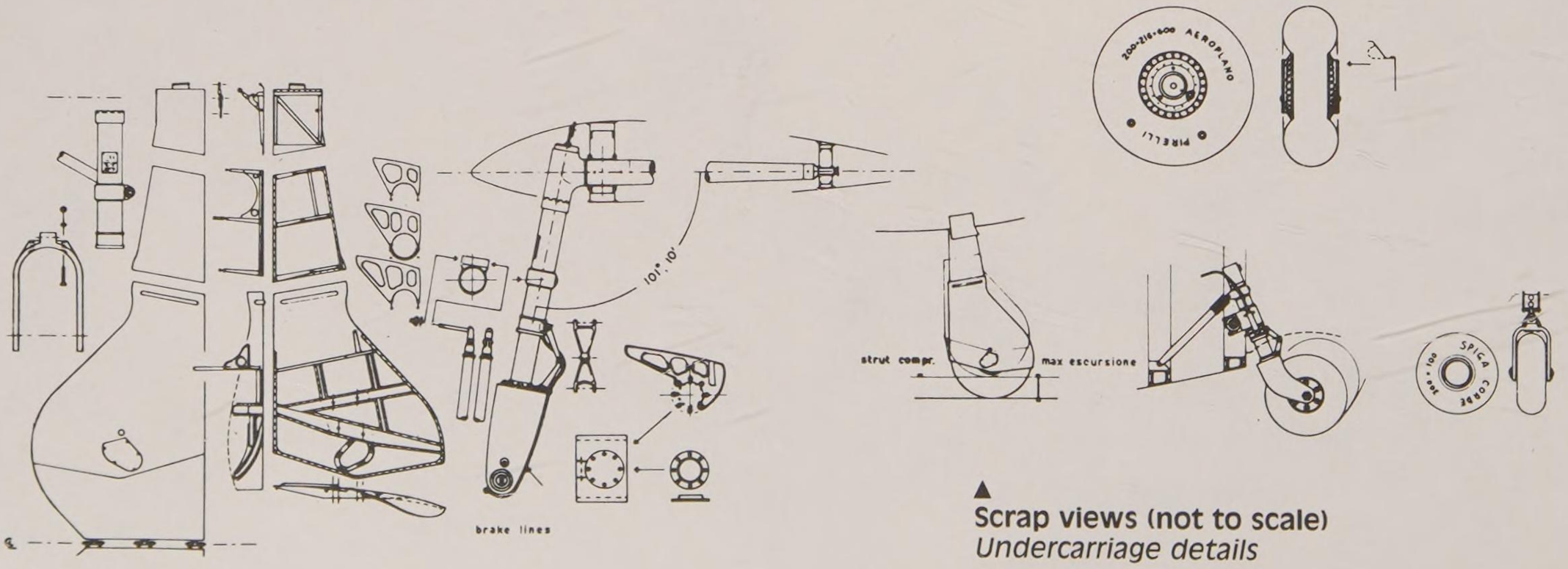
▲
Scrap views (not to scale)
Interior details

Scrap views (not to scale)►
Fiat A74RC.38 engine





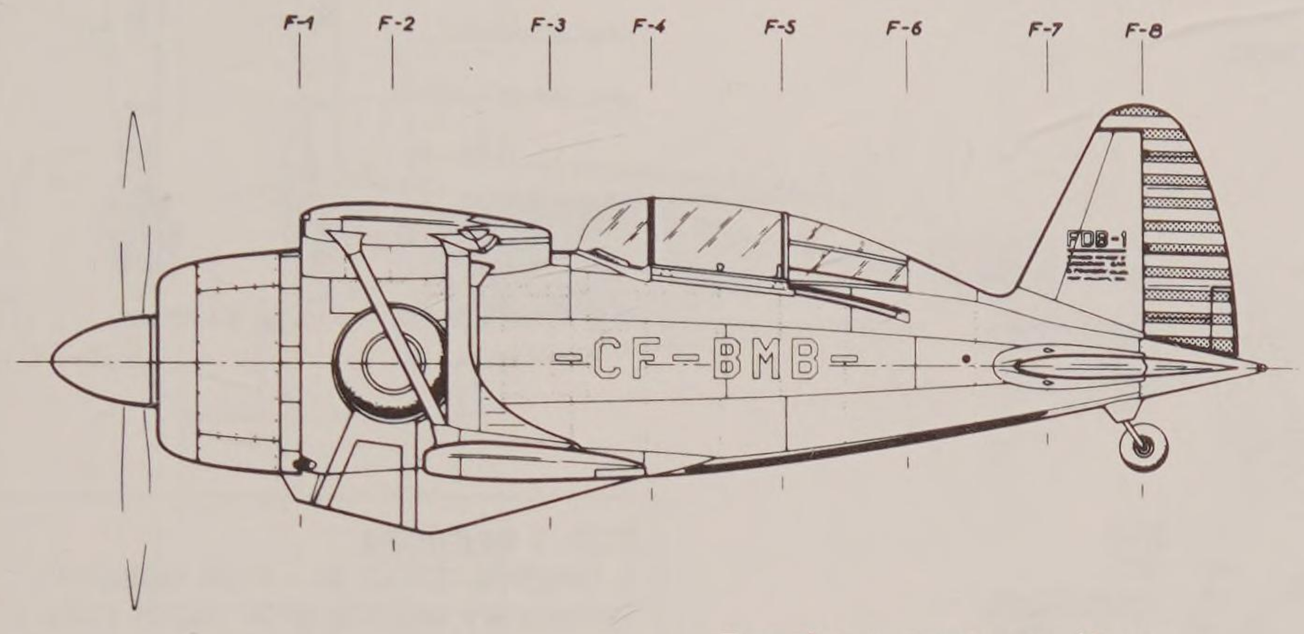




▲
Scrap views (not to scale)
Undercarriage details

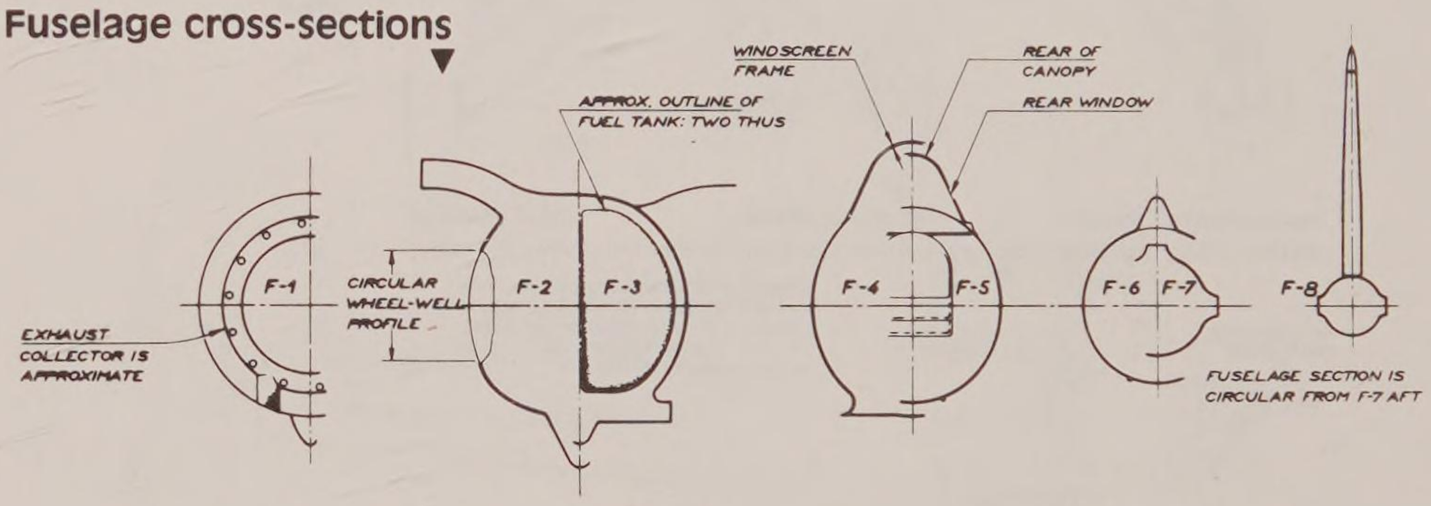
Gregor FDB-1

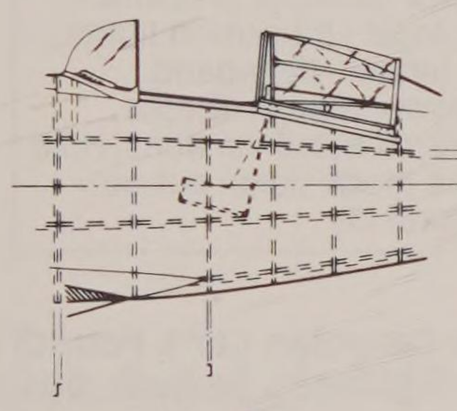
Country of origin: Canada.
Type: Single-seat, land-based fighter/dive-bomber.
Dimensions: Wing span 28ft 0in *8.53m*; length 22ft 0¼in *6.71m*; wing area 194 sq ft *18.02m²*.
Weights: Empty 2280lb *1034kg*; loaded 4100lb *1859kg*.
Powerplant: One Pratt & Whitney R-1535-SB4-G Twin Wasp Junior fourteen-cylinder radial engine rated at 750hp.
Performance: Maximum speed 261mph *420kph*; initial climb rate 2800ft/min *850m/min*; absolute ceiling 27,700ft *8440m*; range (clean) about 1000 miles *1600km*.
Armament: Provision for two fixed 0.50in machine guns, plus two 116lb *53kg* bombs.
Service: First flight 3 March 1939.



▲
Scrap view (1/24th scale)
Fin legend

Fuselage cross-sections ▼

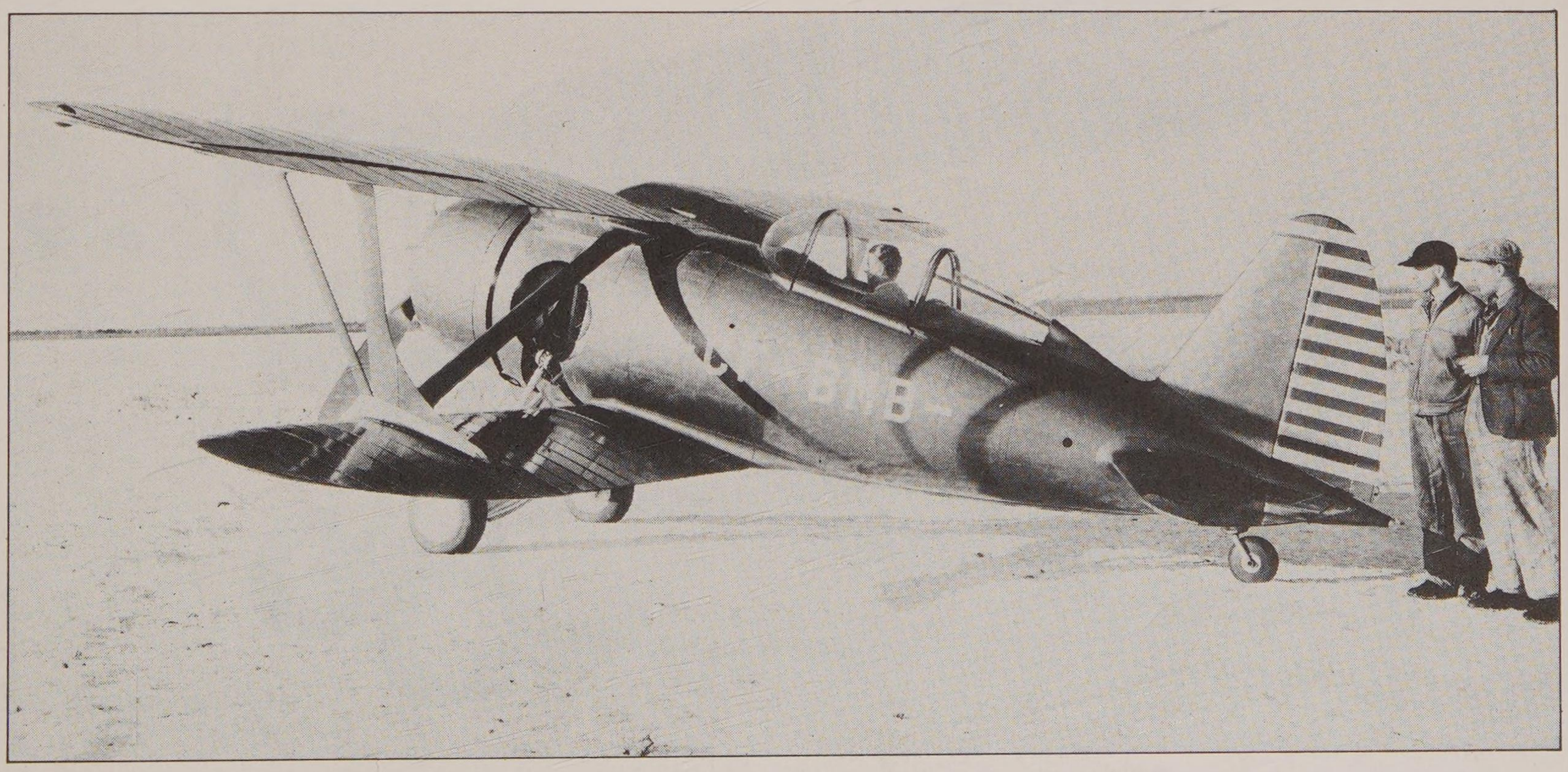




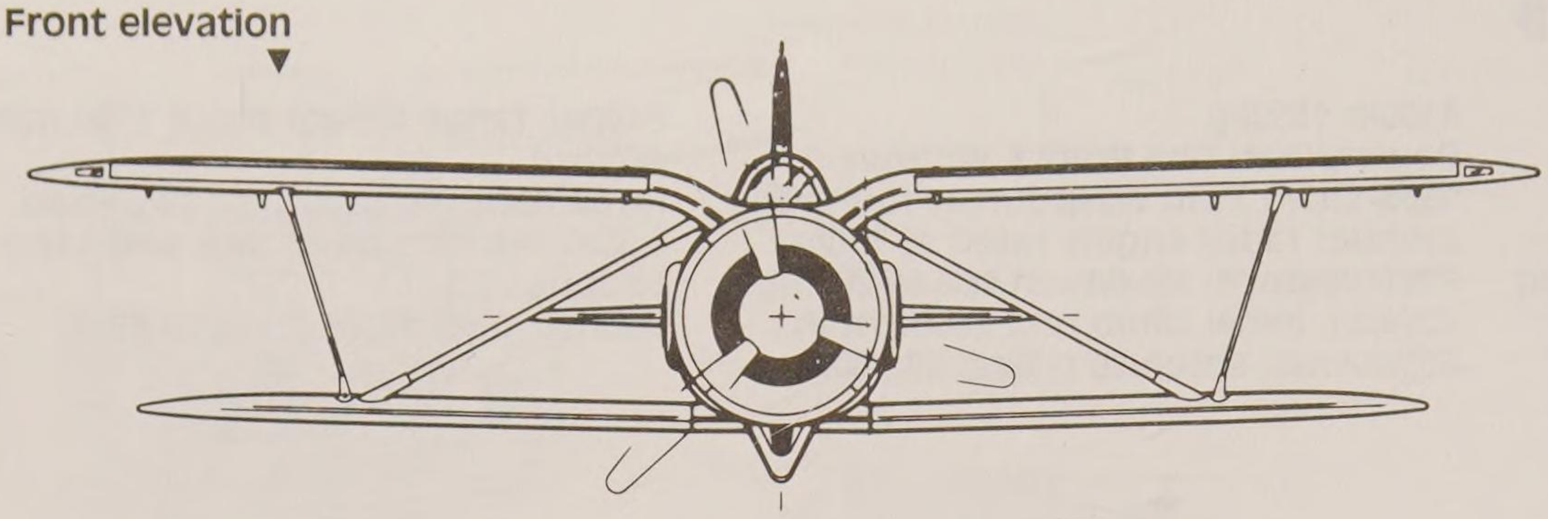
▲
Port elevation

▲
Scrap port elevation
Showing interior detail

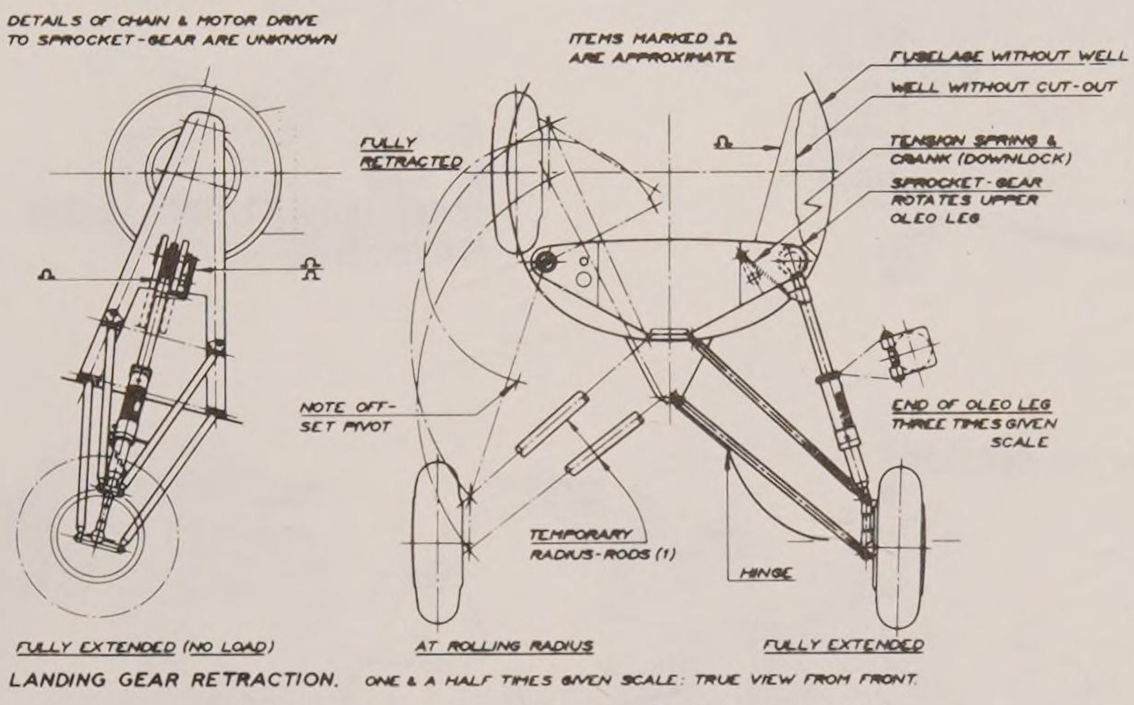
Designed by Russian emigré Michael Gregor, the FDB-1 was rolled out in December 1938 for a series of publicity photos at Fort William, Ontario. Guns would have been installed in the upper wing centre section. (H Robinson)
▼



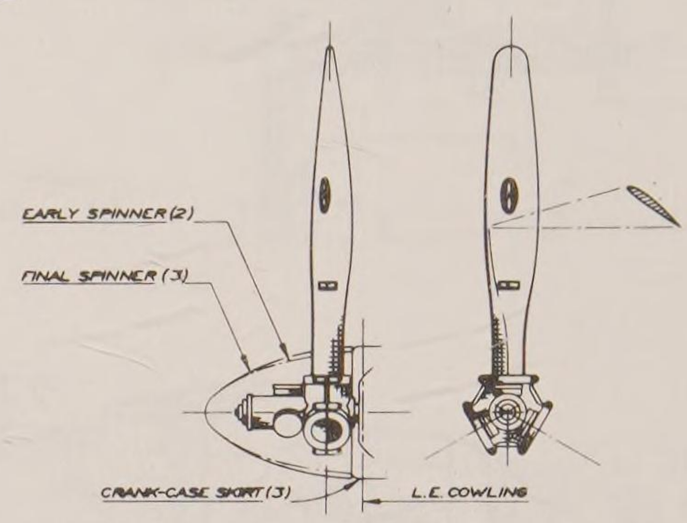
Front elevation
▼



Scrap views (1/48th scale)
Undercarriage details
▼

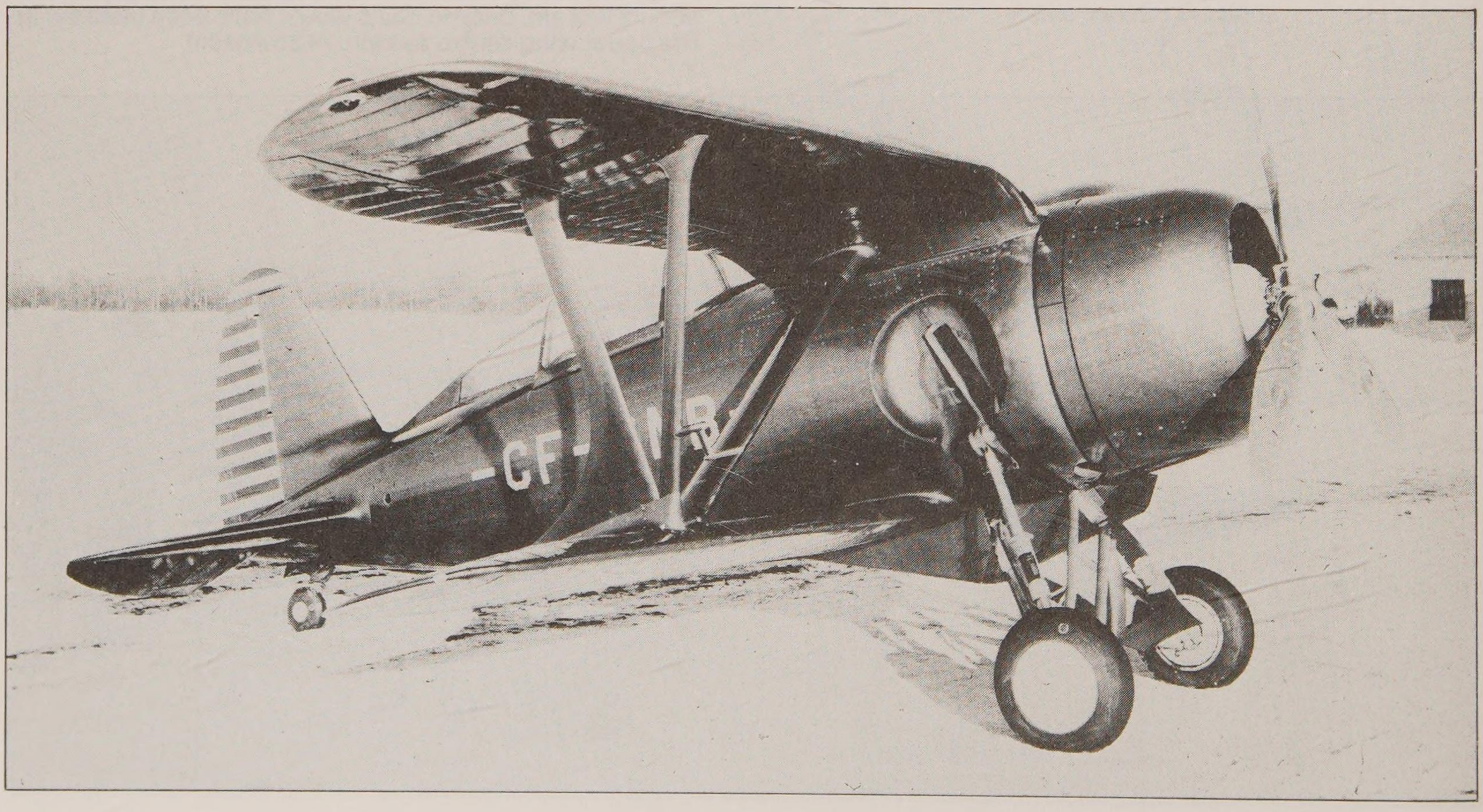

DETAILS OF CHAIN & MOTOR DRIVE TO SPROCKET-GEAR ARE UNKNOWN
ITEMS MARKED ⊼ ARE APPROXIMATE
FUSELAGE WITHOUT WELL
WELL WITHOUT CUT-OUT
TENSION SPRING & CRANK (DOWNLOCK)
SPROCKET-GEAR ROTATES UPPER OLEO LEG
FULLY RETRACTED
NOTE OFF-SET PIVOT
END OF OLEO LEG THREE TIMES GIVEN SCALE
TEMPORARY RADIUS-RODS (1)
HINGE
FULLY EXTENDED (NO LOAD)
AT ROLLING RADIUS
FULLY EXTENDED
LANDING GEAR RETRACTION. ONE & A HALF TIMES GIVEN SCALE: TRUE VIEW FROM FRONT.
COVER DOORS (OMITTED FROM SIDE VIEW) CURVED SECTION HINGED & SPRING-MOUNTED ON RADIUS RODS FOR CLOSE FIT WHEN GEAR RETRACTED. DETAILS ARE UNKNOWN
APPROXIMATE PIVOT AXIS
FLEXIBLE FAIRING
FRONT VIEW
GROUNDED DEFLECTION
TAILWHEEL: ONE & A HALF TIMES GIVEN SCALE
DETAILS OF CASTORING ARE UNKNOWN

Scrap views (1/48th scale)
Propeller details
▼



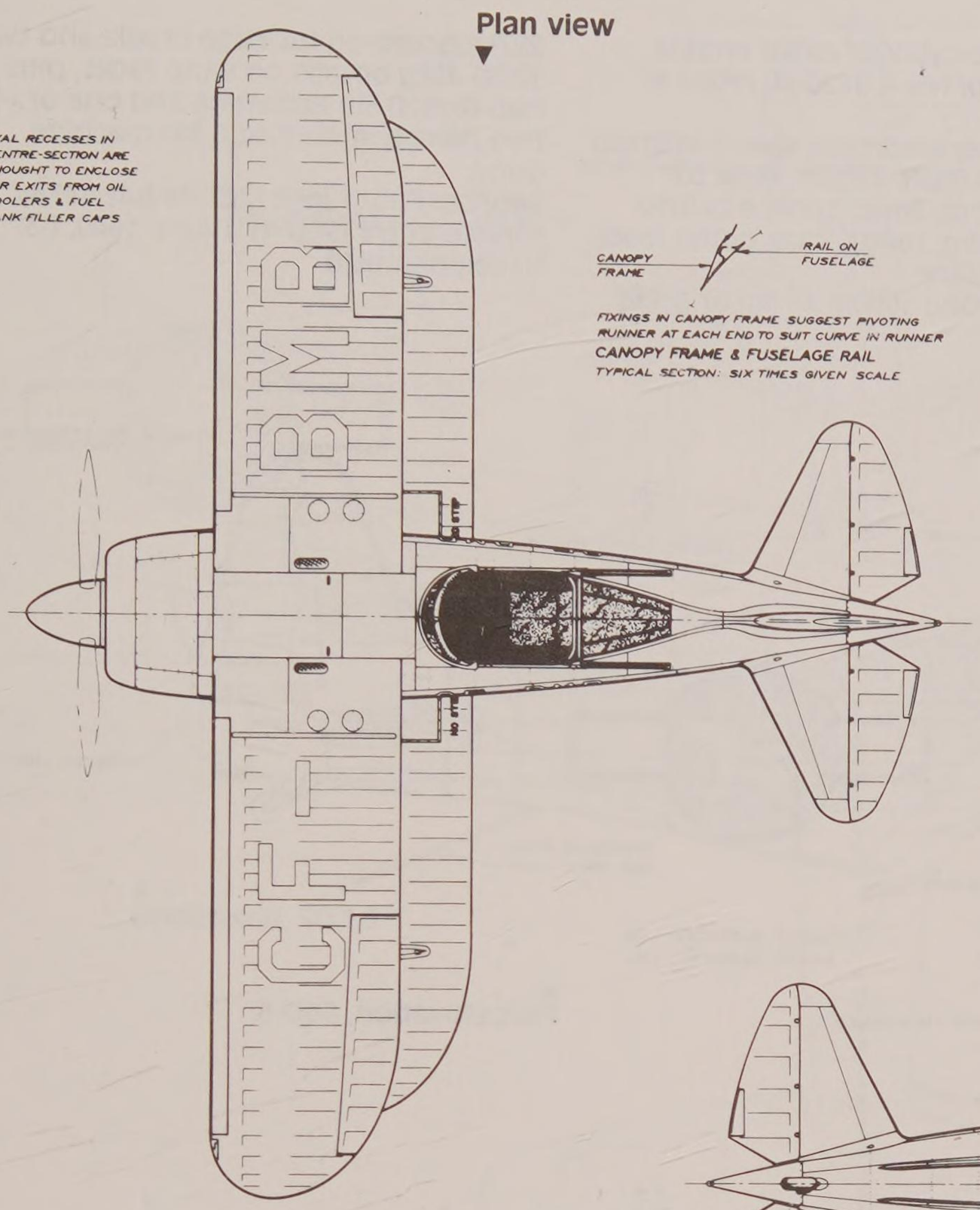
FDB-1 versions
1. Original (17/12/38 – Fort William): Temporary landing gear radius rods; external position lights; no spinner or fin legend.
2. Intermediate: Small-diameter spinner, true radius rods.
3. Final: Large-diameter spinner with crankcase skirt; black backs to propeller blades (38in long); inset LE position lights; aileron horns and hinges; fin legend.
Note: Numbers shown in parentheses against details refer to these versions. Hole forward of tailplane (both sides) did not appear in final version (3).

The FDB-1, constructed by the Canadian Car & Foundry Co, was probably the last biplane fighter to be built, but it failed to arouse official interest. (H Robinson)
▼



Plan view ▼

OVAL RECESSES IN CENTRE-SECTION ARE THOUGHT TO ENCLOSE AIR EXITS FROM OIL COOLERS & FUEL TANK FILLER CAPS



CANOPY FRAME — RAIL ON FUSELAGE

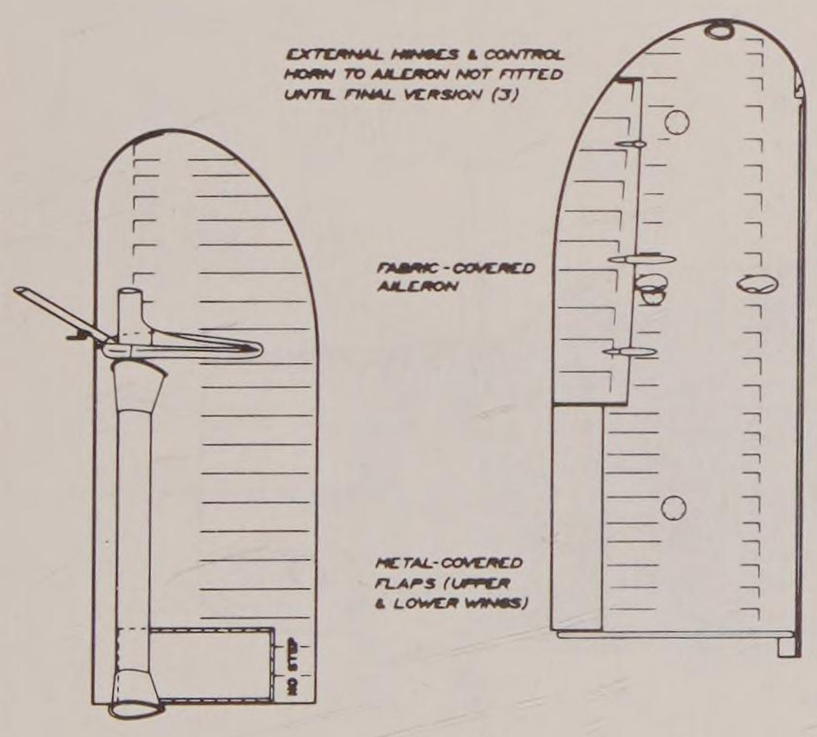
FIXINGS IN CANOPY FRAME SUGGEST PIVOTING RUNNER AT EACH END TO SUIT CURVE IN RUNNER

CANOPY FRAME & FUSELAGE RAIL
TYPICAL SECTION: SIX TIMES GIVEN SCALE

Scale

0 1 2 3 4 5 6 7 8 ft
0 1 2m

Scrap views (1/36th scale) ►
Air speed pitot tubes


EXTERNAL HINGES & CONTROL HORN TO AILERON NOT FITTED UNTIL FINAL VERSION (3)
FABRIC-COVERED AILERON
METAL-COVERED FLAPS (UPPER & LOWER WINGS)

FRONT

SIDE

VIEW & DETAILS AT LEFT SHOW ORIGINAL (1) & (2) WING-TIP POSITION LIGHTS

METAL SURROUNDS ARE UNPAINTED

▲ Underplan

◄ Scrap underplan
Starboard upper wing

▲ Scrap plan view
Starboard lower wing

Scrap views (not to scale) ▼
Aileron controls

AILERON CONTROLS ARE APPROXIMATE

OUTBOARD

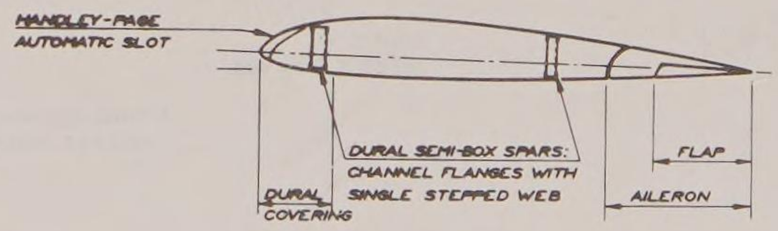
INBOARD

AILERON HINGES

COWL PANELS ARE SCREW-FASTENED

AILERON HORN

Typical upper wing cross-section ▼



TWICE GIVEN SCALE

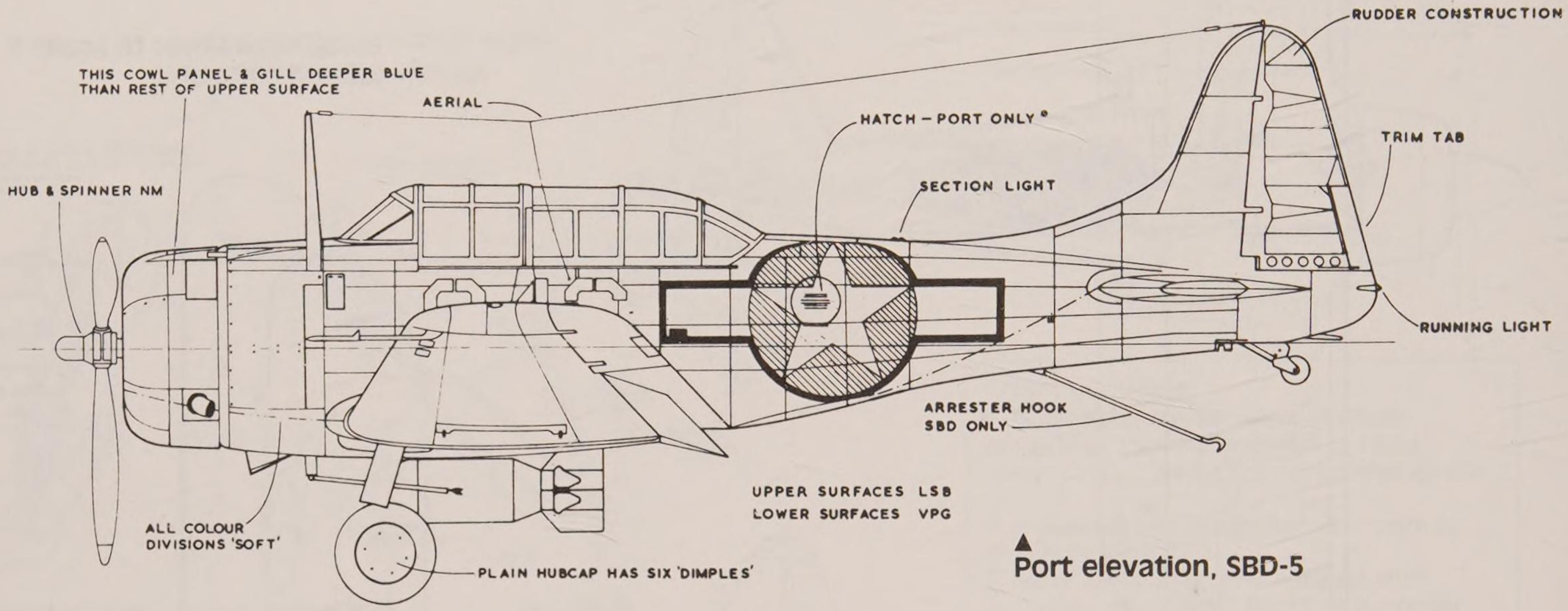
Colour notes

Overall finish – deep gunmetal blue ('a little lighter than a rifle barrel'); registration lettering – aluminium; propeller/spinner, wheels and landing gear members and interior of cover doors – natural metal; early landing gear radius rods – believed light grey (1); 'CCF Co' legend on fin – white; rudder striping – red/white.

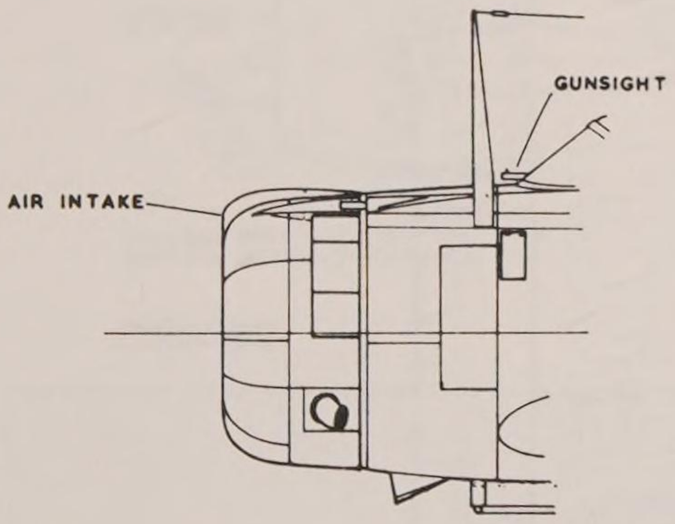
DRAWN BY HARRY ROBINSON

Douglas SBD-3 and -5 Dauntless

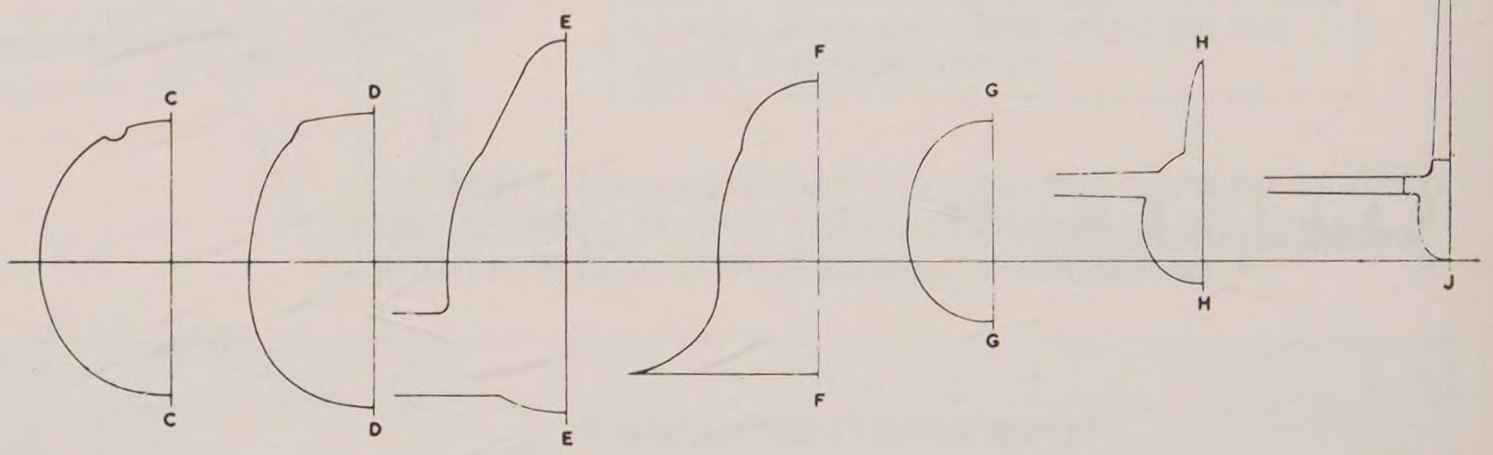
Country of origin: USA.
Type: Two-seat, carrier-based scout/dive bomber.
Dimensions: Wing span 41ft 0in *12.50m*; length 32ft 0in *9.75m*; height 13ft 0in *3.96m*; wing area 325 sq ft *30.19m²*.
Weights: Empty 6535lb *2964kg*; loaded 9519lb *4317kg*.
Powerplant: One Wright R-1820-52 Cyclone nine-cylinder radial engine rated 1000hp, (-5) R-1820-60 rated at 1200hp.
Performance: Maximum speed 255mph *411kph* at 14,000ft *4265m*; time to 10,000ft *3050m*, 7min; service ceiling 25,200ft *7680m*; range (max bomb load) 450 miles *725km*.
Armament: One 1000lb *454kg* or 500lb *227kg* bomb on fuselage cradle and two 100lb *45kg* bombs on wing racks, plus two fixed 0.5in Browning and one or (-5) two flexibly mounted 0.3in machine guns.
Service: First flight (XBT-1) July 1935; service entry (SBD-1) 4 June 1940, (-3) December 1940.



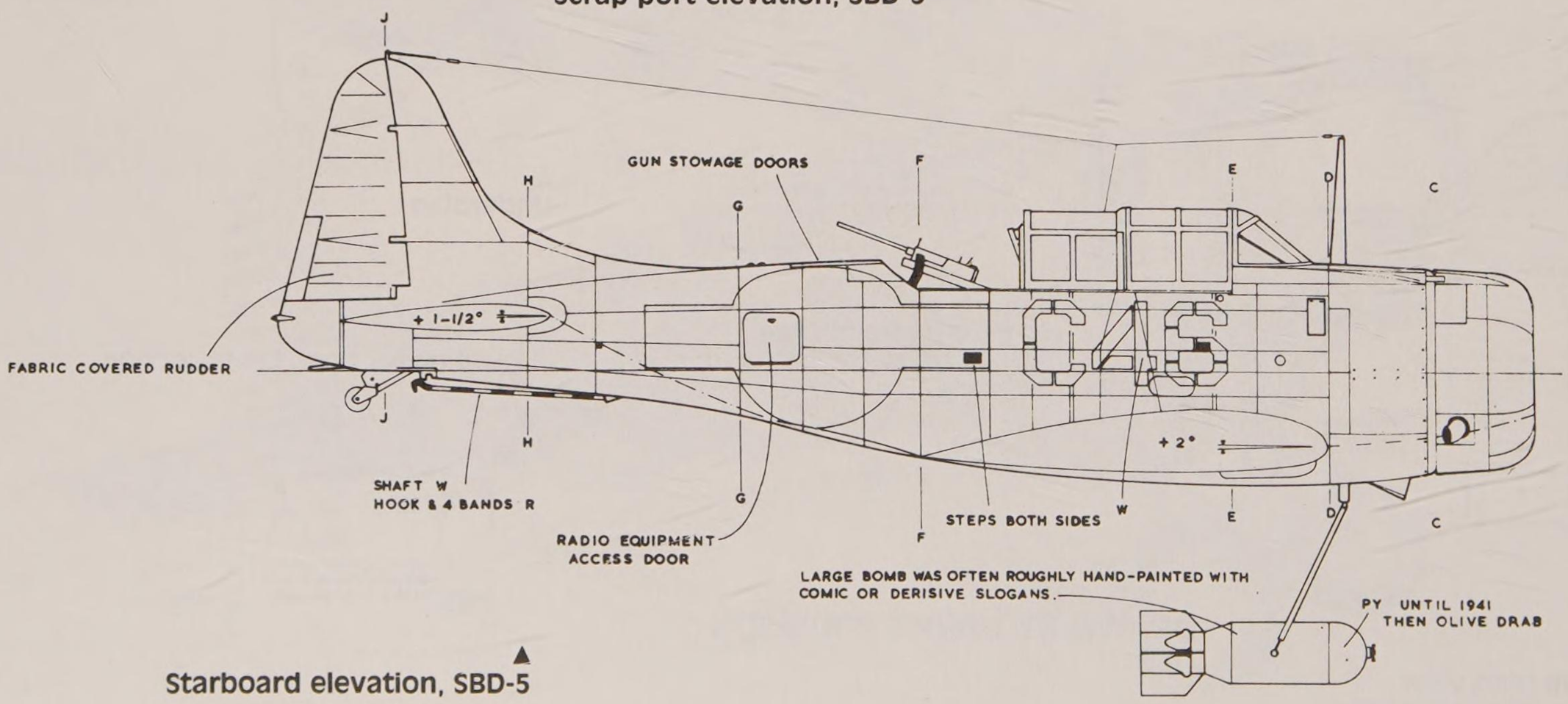
▲ Port elevation, SBD-5



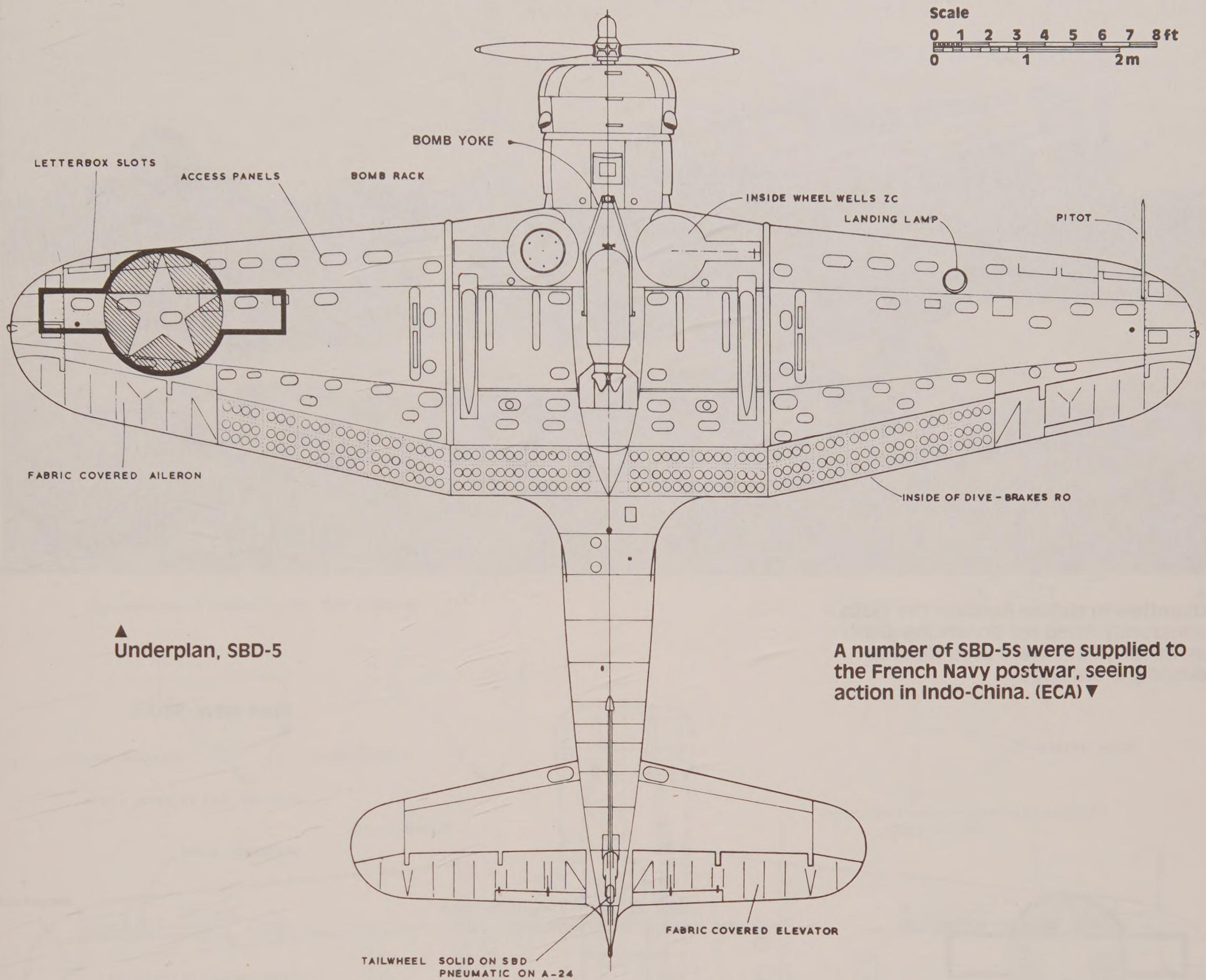
▲ Scrap port elevation, SBD-3



▲ Fuselage cross-sections

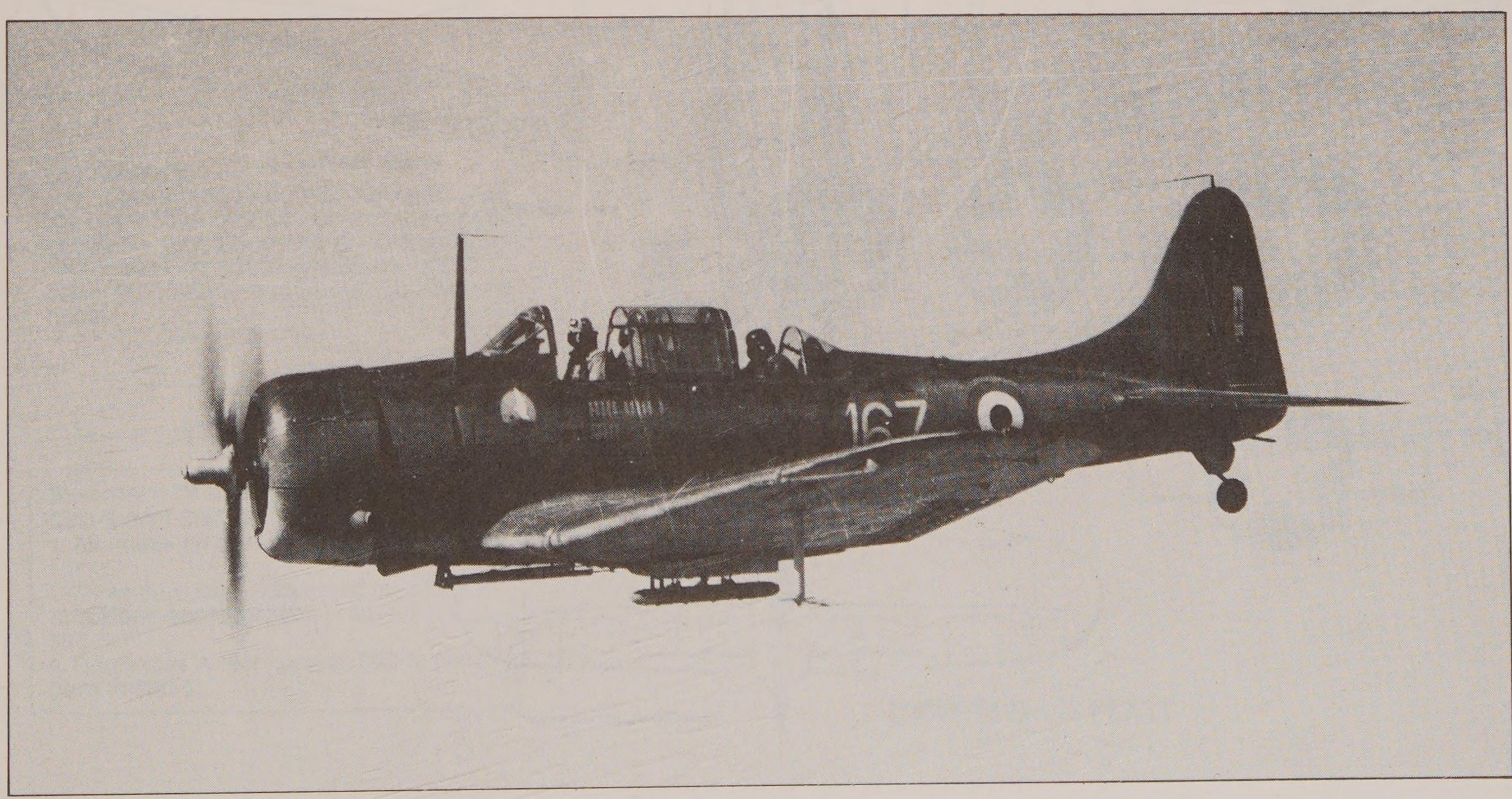

GUN STOWAGE DOORS
+ 1-1/2°
+ 2°
FABRIC COVERED RUDDER
SHAFT W
HOOK & 4 BANDS R
RADIO EQUIPMENT ACCESS DOOR
STEPS BOTH SIDES
LARGE BOMB WAS OFTEN ROUGHLY HAND-PAINTED WITH COMIC OR DERISIVE SLOGANS.
PY UNTIL 1941 THEN OLIVE DRAB

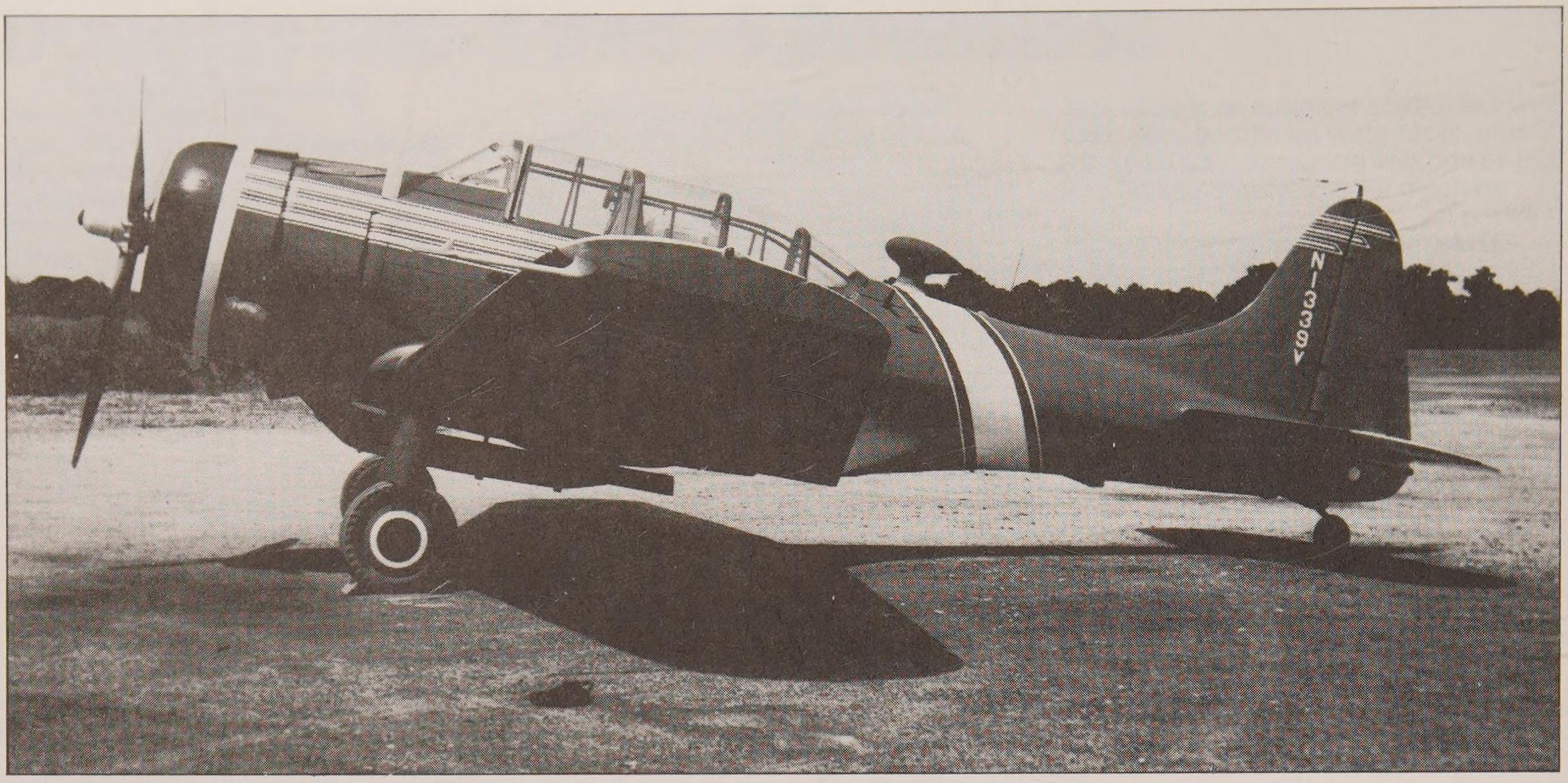
▲ Starboard elevation, SBD-5



▲ Underplan, SBD-5

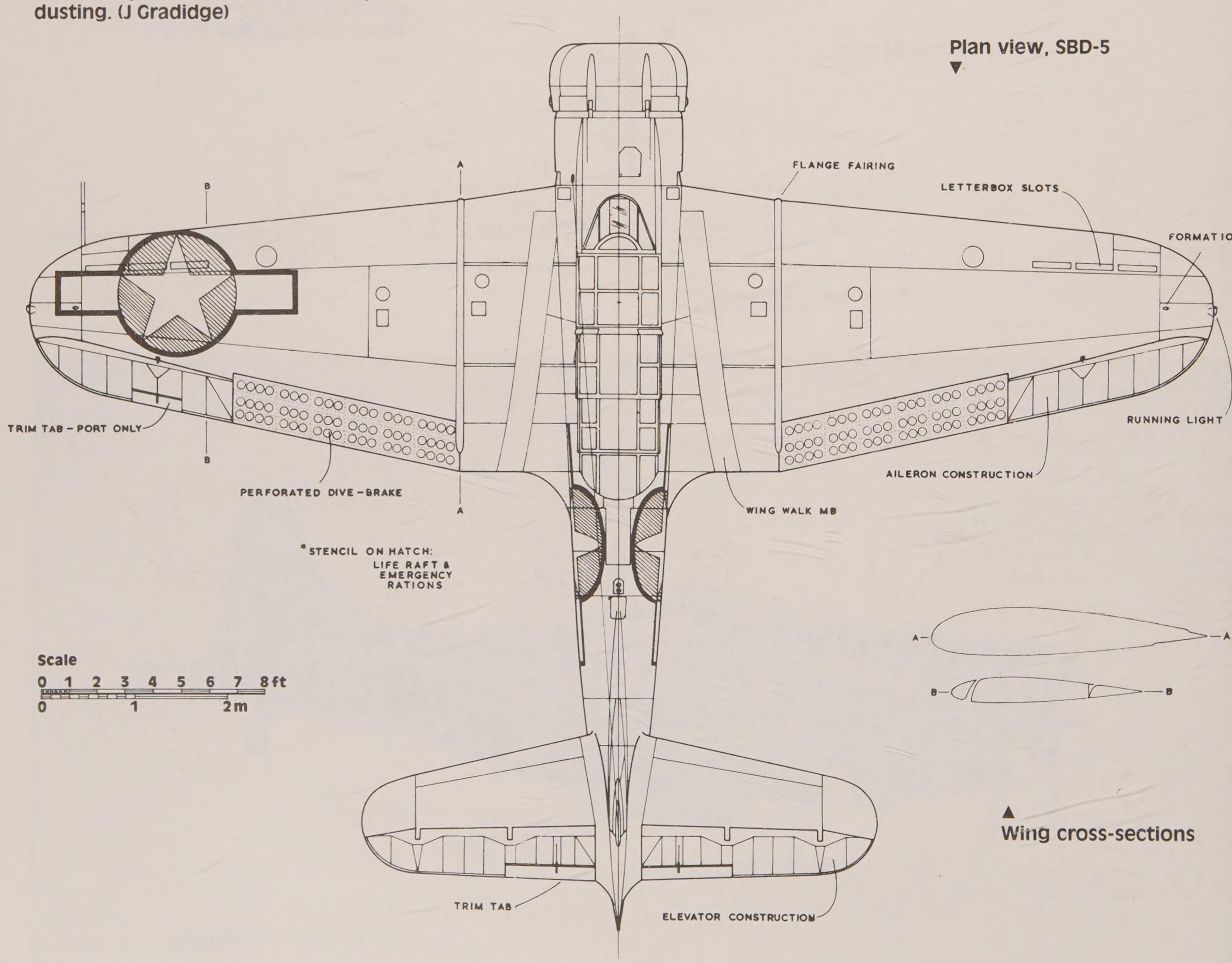
A number of SBD-5s were supplied to the French Navy postwar, seeing action in Indo-China. (ECA) ▼



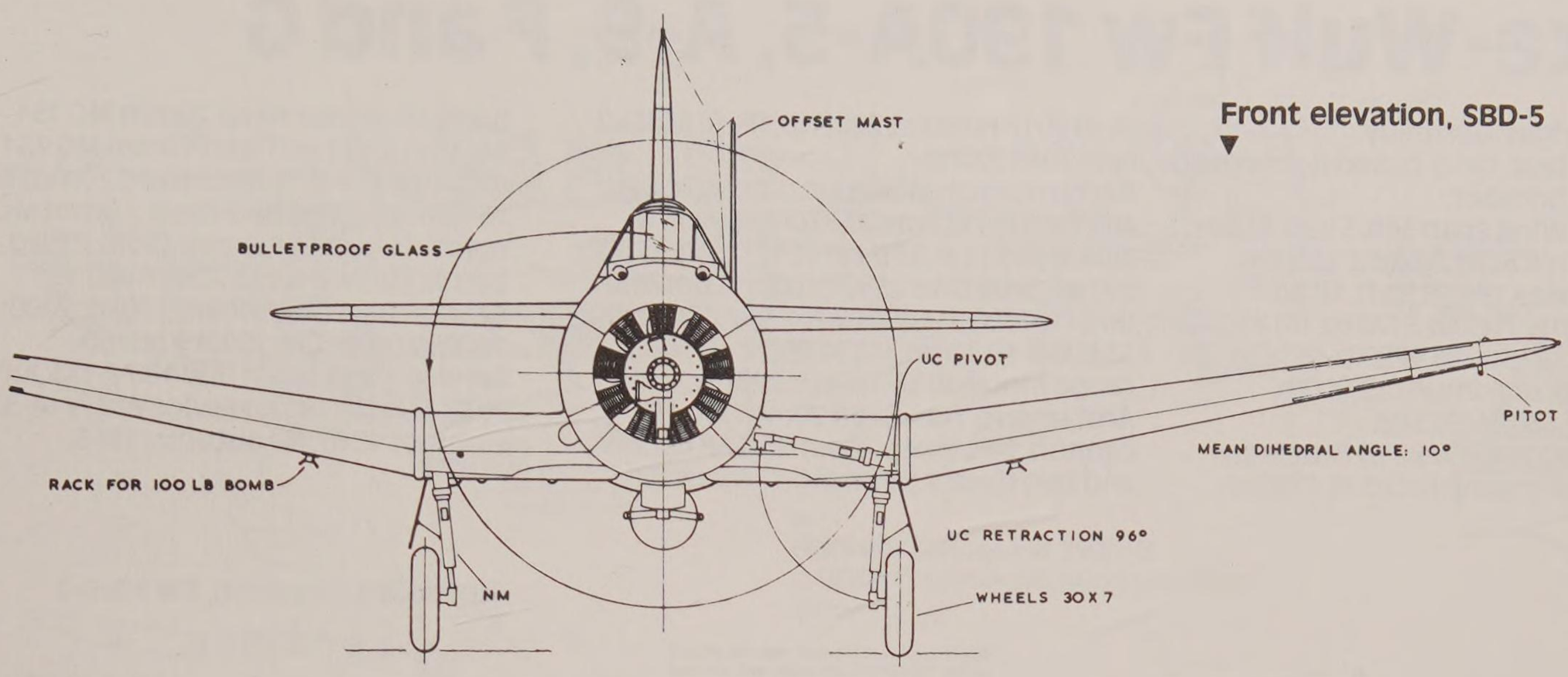


▲
Dauntless in civilian hands in the 1950s, apparently fitted for skywriting. Other ex-military SBDs were used for crop-dusting. (J Gradidge)

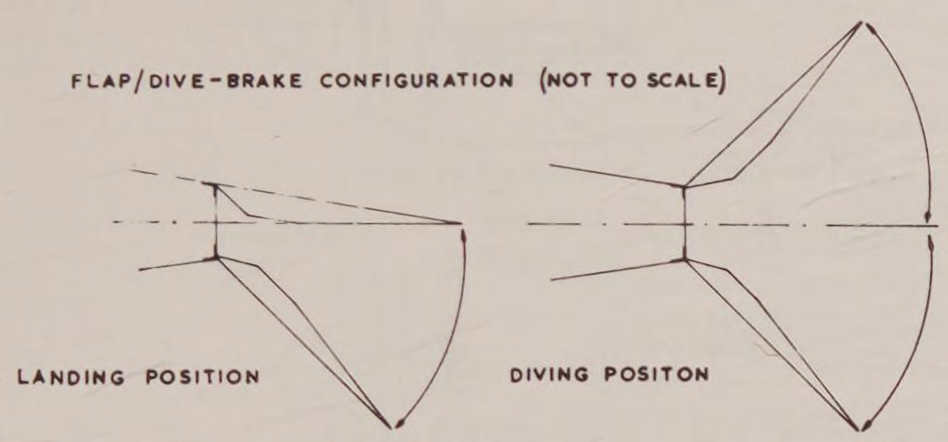
Plan view, SBD-5
▼

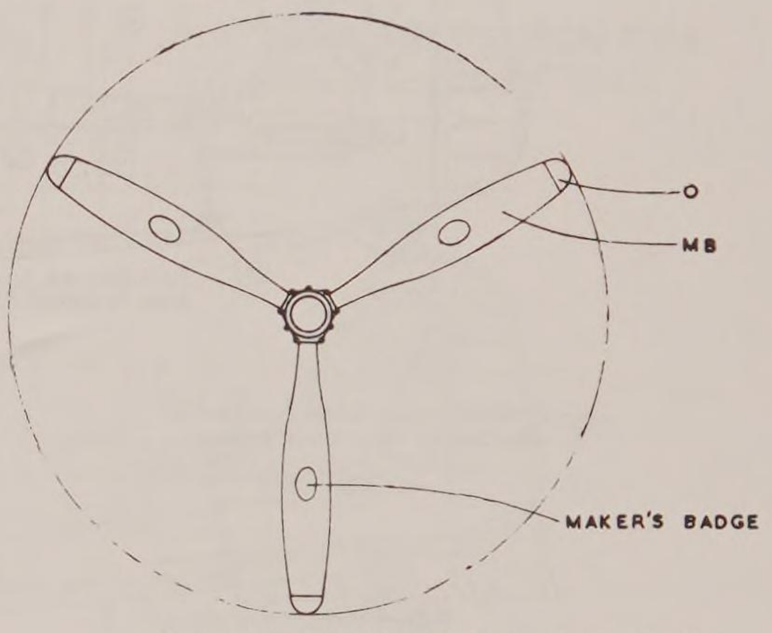


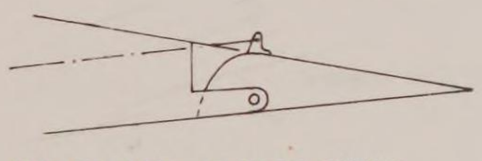
▲
Wing cross-sections



Front elevation, SBD-5





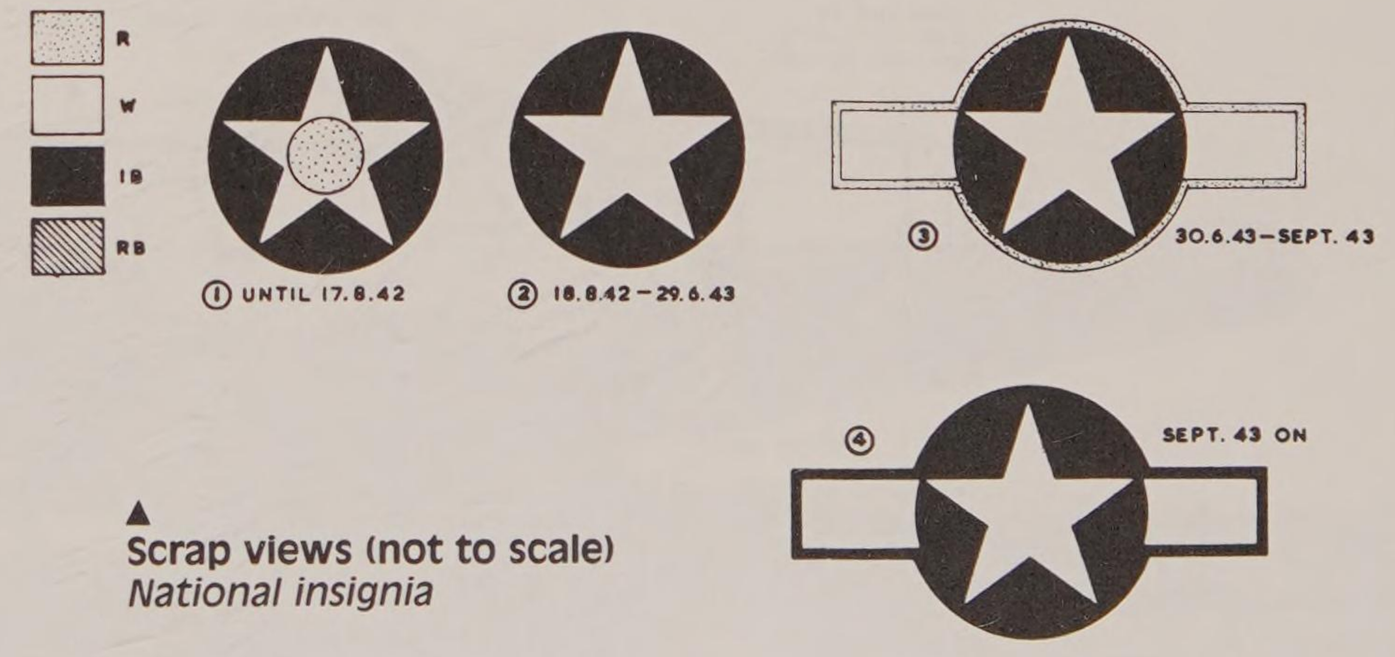


◀ Scrap views (not to scale)
Flap/dive brake configuration

▲ Propeller details

Colour code

LSB – Light smoky blue; **VPG** – Very pale grey; **RB** – Dirty royal blue; **ZC** – ZC (zinc chromate) green; **R** – Red; **W** – White; **O** – Orange; **RO** – Red-orange; **PY** – Pale yellow; **MB** – Matt black; **IB** – Insignia Blue (Navy); **NM** – Natural metal.



▲ Scrap views (not to scale)
National insignia

Summary of external differences, SBD-5 and SBD-3

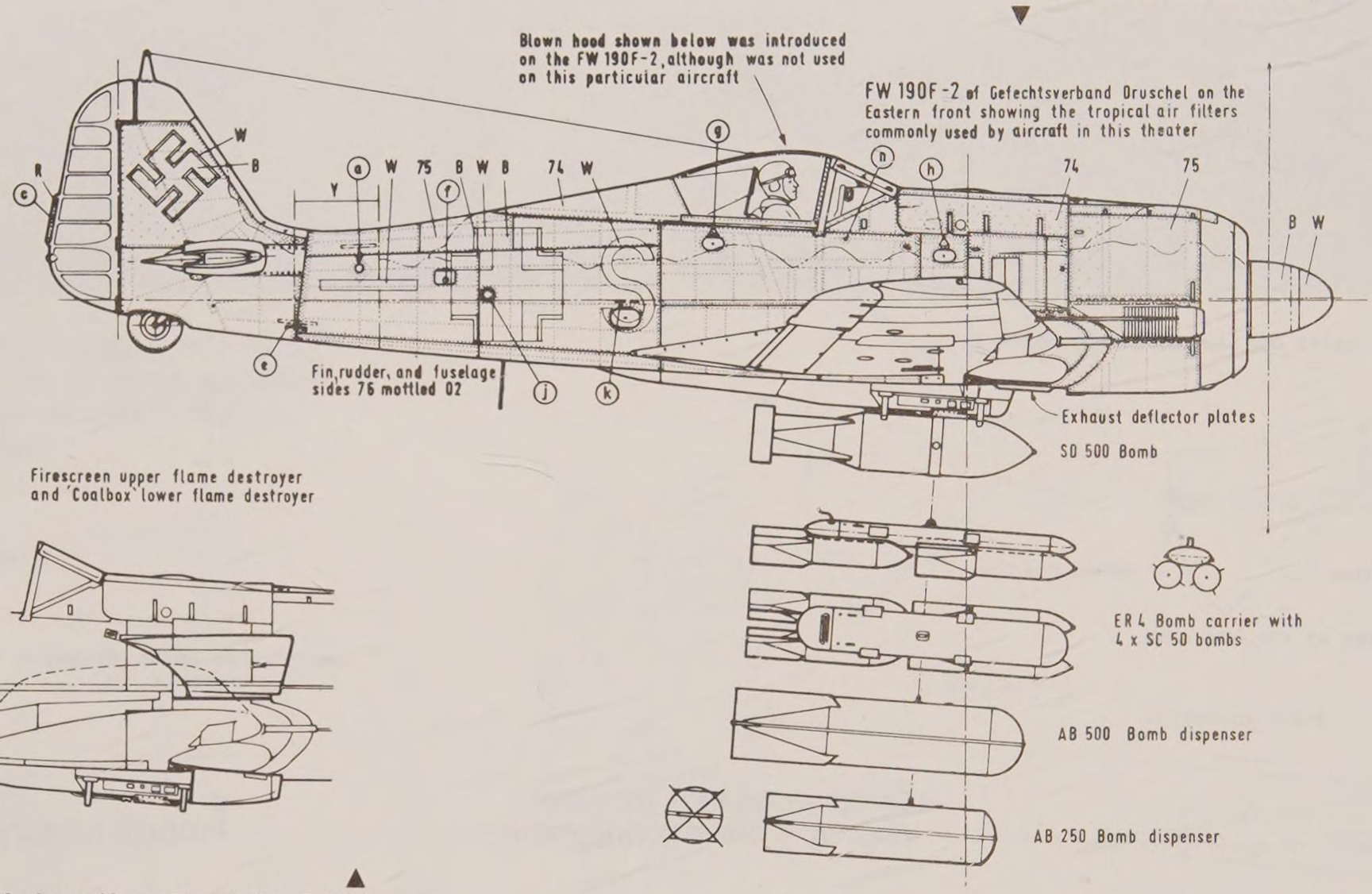
1. Air intake on cowl top, SBD-3; absent on SBD-5.
2. Three cowl gills, SBD-3; one on SBD-5.
3. External gunsight, SBD-3; absent on SBD-5.
4. Single gun in rear cockpit, SBD-3; twin guns in SBD-5.

DRAWN BY D PLATT

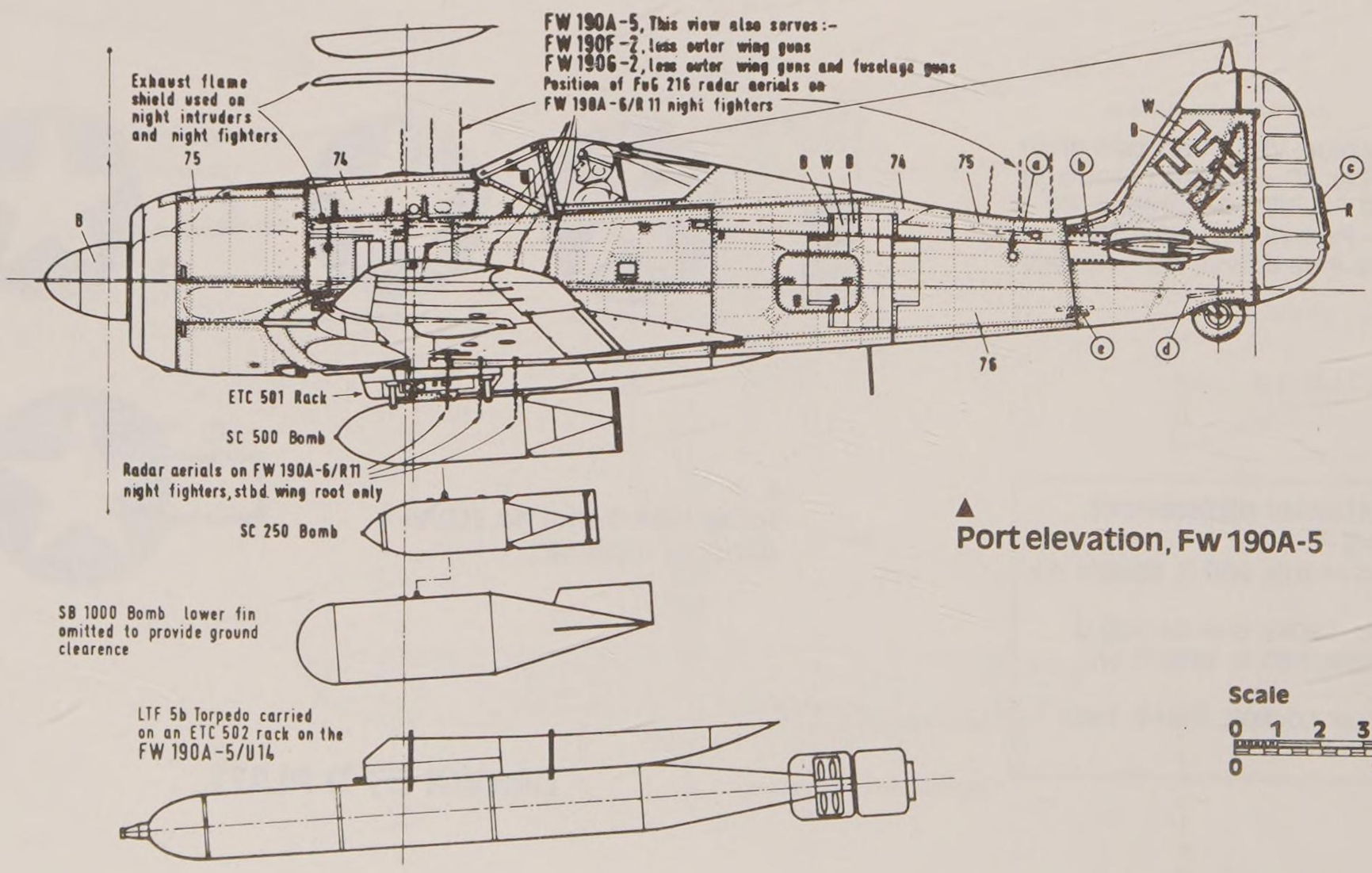
Focke-Wulf Fw 190A-5, A-9, F and G

Country of origin: Germany.
Type: Single-seat, land-based fighter and (F, G) fighter-bomber.
Dimensions: Wing span 34ft 5½in *10.5m*; length 29ft 0in *8.84m*; height 13ft 0in *3.96m*; wing area 196.98 sq ft *18.3m²*.
Weights: Empty 7000lb *3176kg*, (F) 7328lb *3325kg*; normal loaded 9750lb *4424kg*, (F) 9700lb *4401kg*; maximum 10,800lb *4900kg*, (F) 10,850lb *4923kg*.
Powerplant: One BMW 801D fourteen-cylinder radial engine rated at 1700hp, (A-9) 801F rated at 2000hp, (F, G) 801D-2 rated at 1700hp.
Performance: Maximum speed (clean) 408mph *657kph* at 20,670ft *6300m*, (F, clean) 394mph *634kph* at 18,050ft *5500m*; initial climb rate 2350ft/min *720m/min*, (F) 2110ft/min *640m/min*; service ceiling 33,800ft *10,300m*, (F) 34,800ft *10,600m*; range (normal) 500 miles *800km*.
Armament: Two fixed 20mm MG 151 cannon, two fixed 20mm MG FF cannon and two fixed 7.9mm MG 17 machine guns, (A-9) four fixed 20mm MG 151 cannon and two fixed 13mm MG 131 machine guns, (F) two fixed 20mm MG 151 cannon and two fixed 7.9mm MG 17 machine guns plus one 550lb *250kg* bomb, (G) two fixed 20mm MG 151 cannon plus one 1100lb *500kg*, 2200 *1000kg* or 3960lb *1800kg* bomb.
Service: First flight (Fw 190V-1) 1 June 1939, (F) late 1942; service entry (A-5) summer 1943, (G) autumn 1943.

Starboard elevation, Fw 190F-2

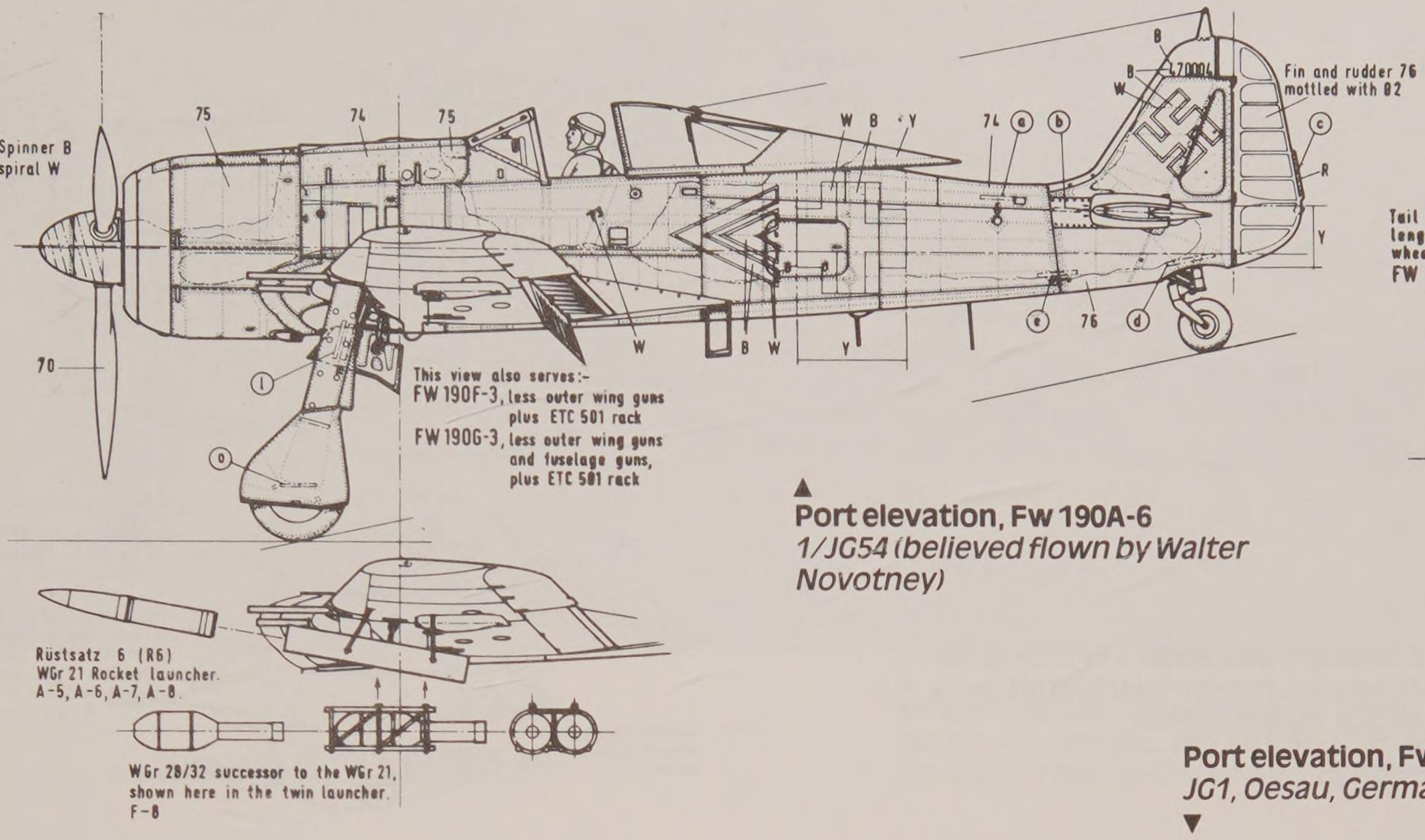

Blown hood shown below was introduced on the FW 190F-2, although was not used on this particular aircraft
FW 190F-2 of Gefechtsverband Druschel on the Eastern front showing the tropical air filters commonly used by aircraft in this theater
Fin, rudder, and fuselage sides 76 mottled 02
Exhaust deflector plates
SD 500 Bomb
Firescreen upper flame destroyer and 'Coalbox' lower flame destroyer
ER 4 Bomb carrier with 4 x SC 50 bombs
AB 500 Bomb dispenser
AB 250 Bomb dispenser

Scrap starboard elevation, Fw 190A-5/U2
Wk Nr 1083, Ge+LA

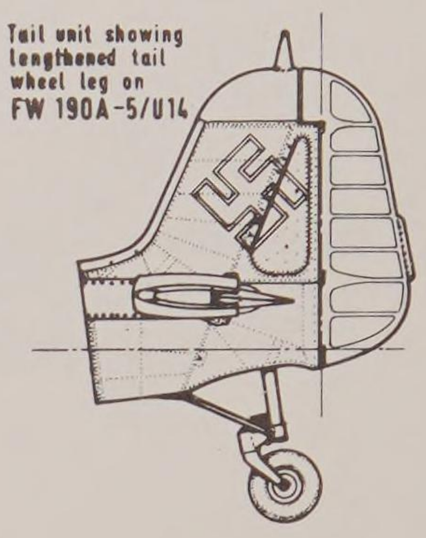

FW 190A-5, This view also serves:-
FW 190F-2, less outer wing guns
FW 190G-2, less outer wing guns and fuselage guns
Position of FuG 216 radar aerials on FW 190A-6/R11 night fighters
Exhaust flame shield used on night intruders and night fighters
ETC 501 Rack
SC 500 Bomb
Radar aerials on FW 190A-6/R11 night fighters, stbd. wing root only
SC 250 Bomb
SB 1000 Bomb lower fin omitted to provide ground clearence
LTF 5b Torpedo carried on an ETC 502 rack on the FW 190A-5/U14

Port elevation, Fw 190A-5

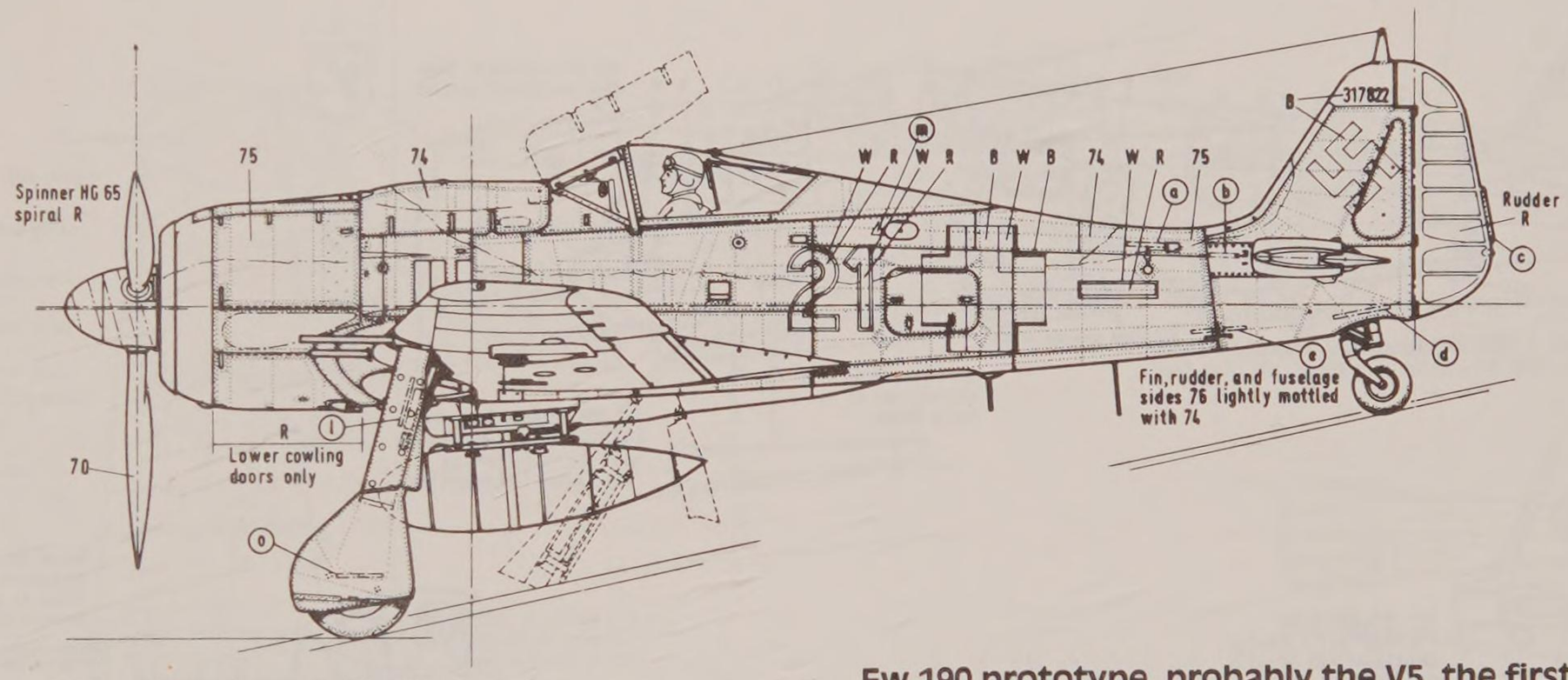
Scale
0 1 2 3 4 5 6 7 8 ft
0 1 2m



▲ **Port elevation, Fw 190A-6**
1/JG54 (believed flown by Walter Novotney)

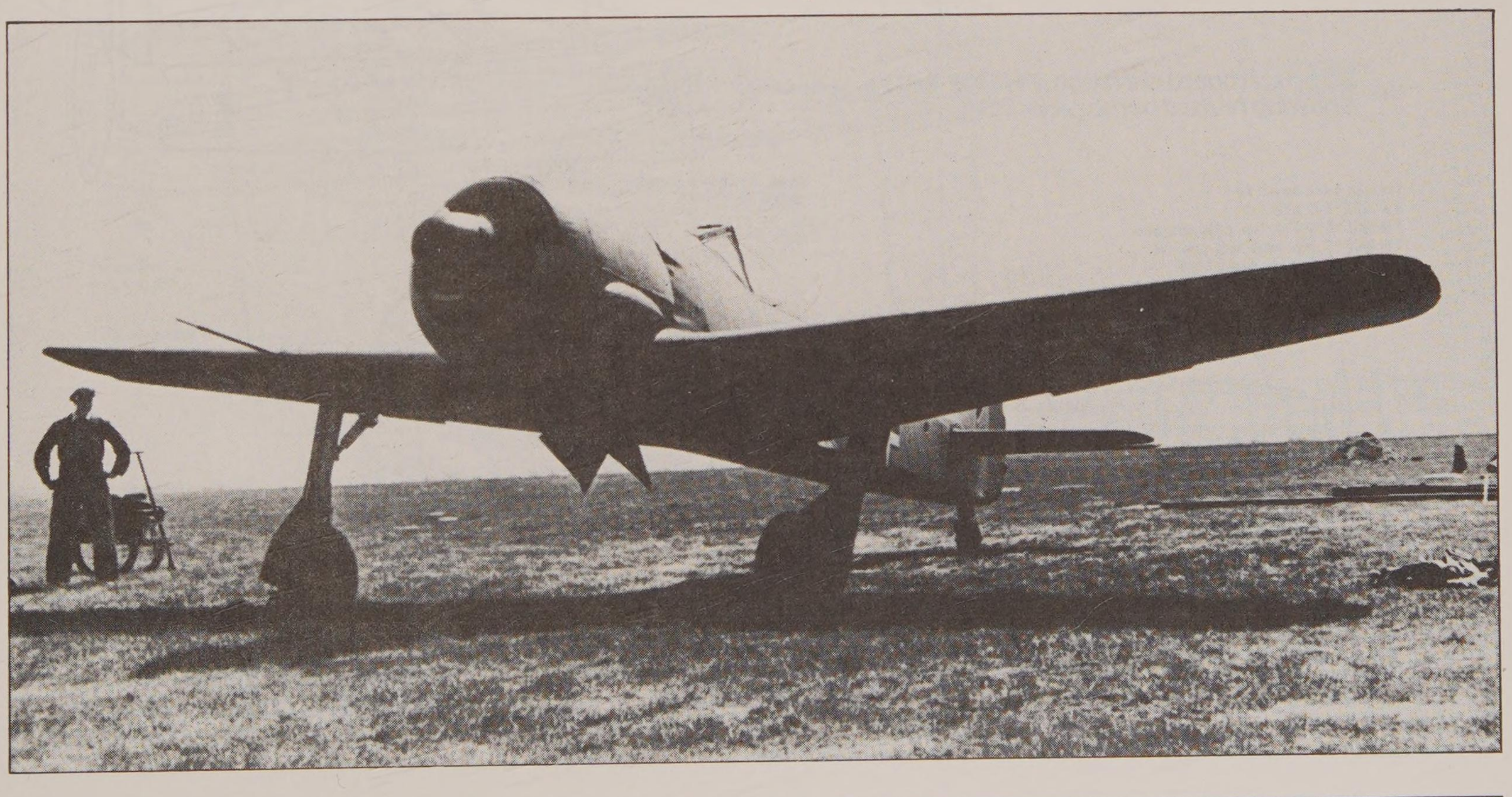


Port elevation, Fw 190A-7/R6
JG1, Oesau, Germany, 1943
▼



The R6 installation has been omitted from this view for clarity.

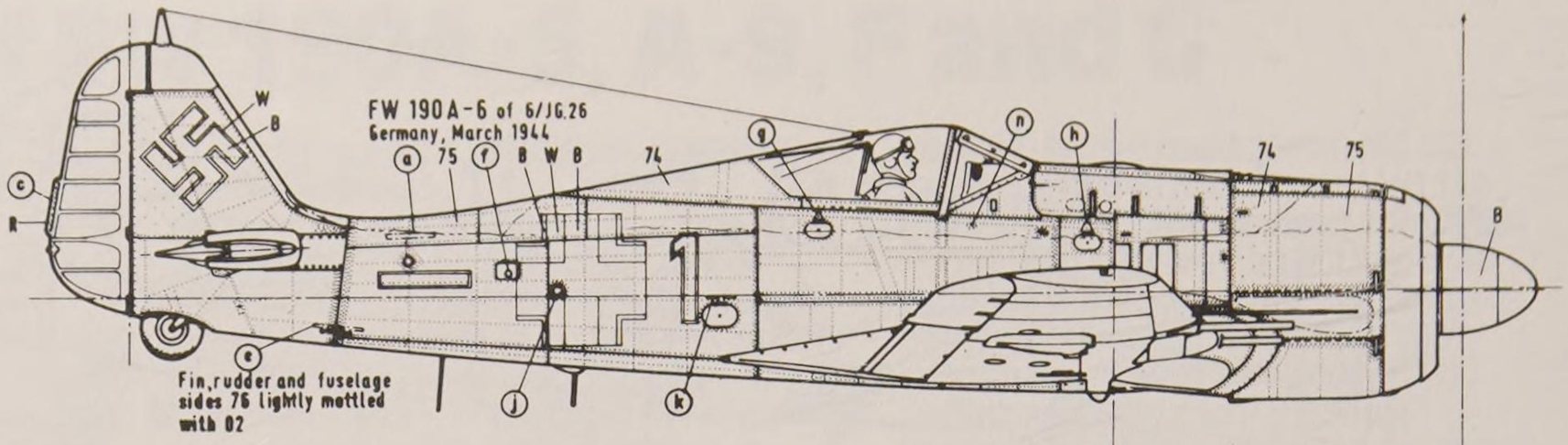
Fw 190 prototype, probably the V5, the first to be powered by the BMW 801 engine. (J Brindley)
▼



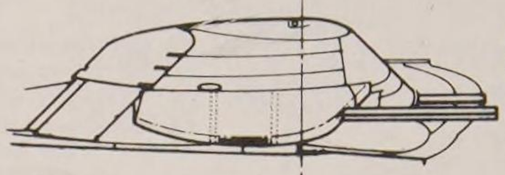
Scale

0 1 2 3 4 5 6 7 8 ft

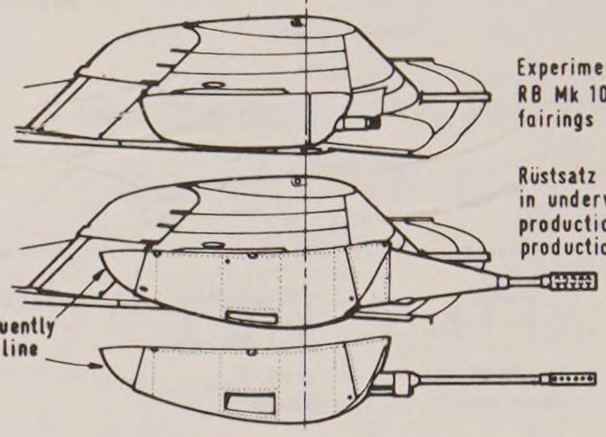
0 1 2 m



Starboard elevation, Fw 190A-6 ►
6/JG26, Germany, March 1944



Rüstsatz 1 (R1) 4 x MG 151 paired in gun packs under each wing. A-6, A-7, A-8, A-9, F-3, F-8, G-3.

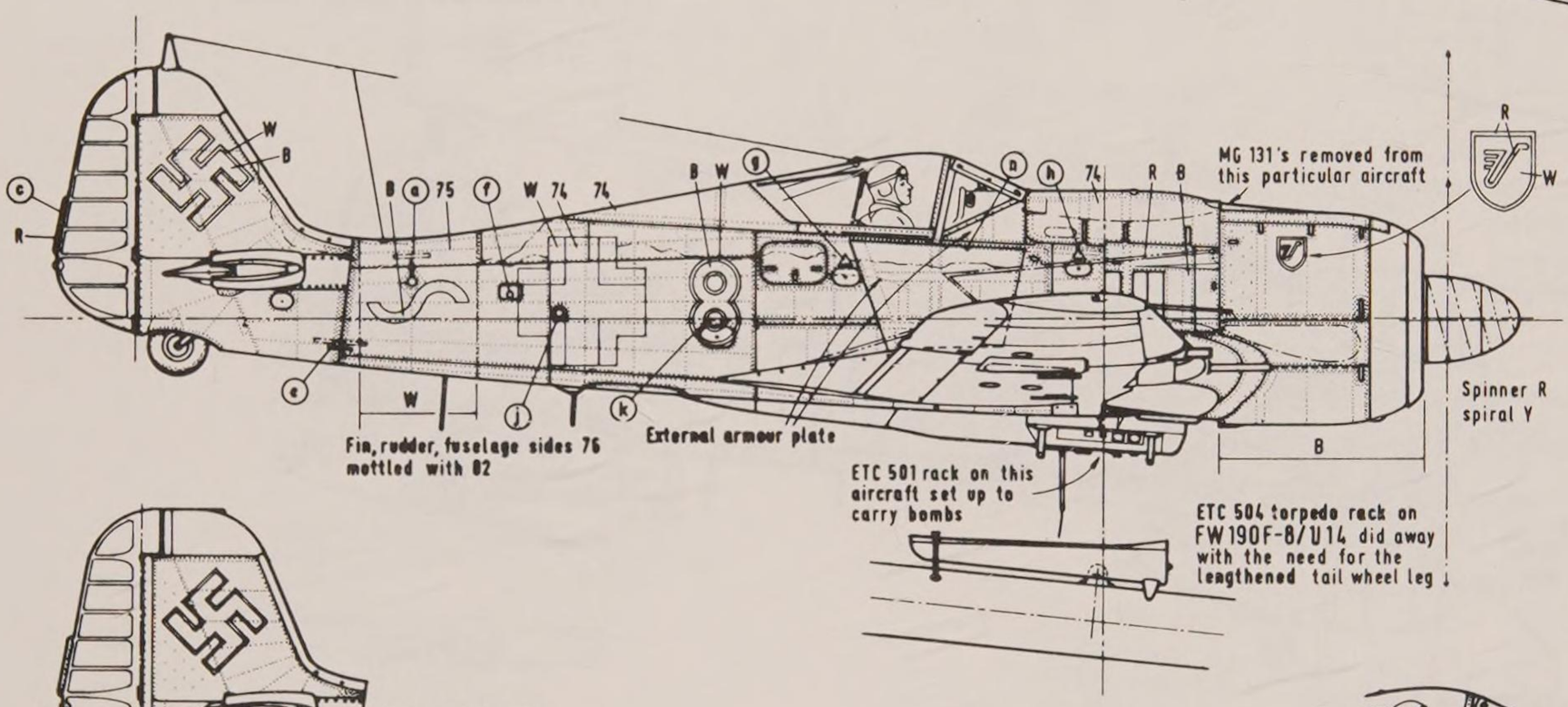


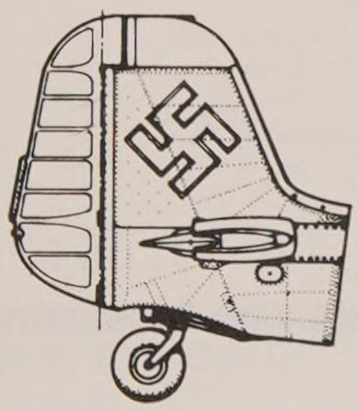
Experimental installation of RB Mk 108 in underwing fairings

Rüstsatz 3 (R3) RB Mk 103 in underwing fairings. Late production style top, early production style bottom. A-6, A-7, A-8, A-9, F-3, F-8, F-9.

Rear fairing frequently removed in front line service

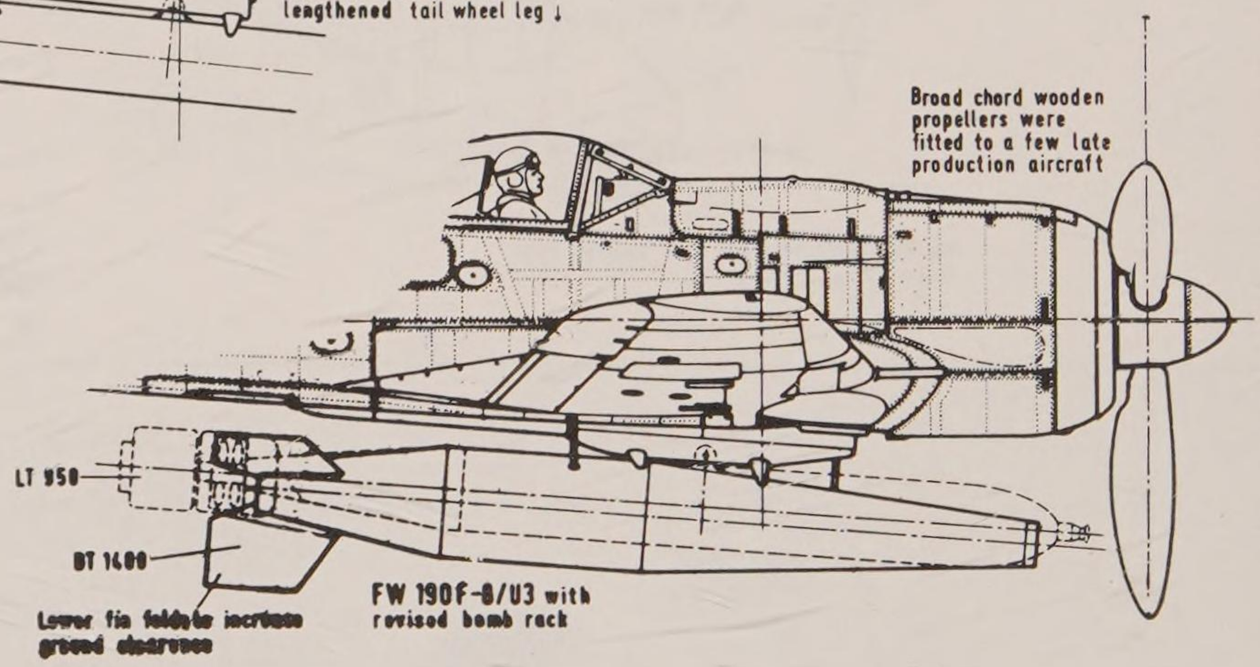
Starboard elevation, Fw 190A-8/R8
Flown by Unteroffizier Maximowitz, IV/JG3, summer 1944
▼


MG 131's removed from this particular aircraft
Fin, rudder, fuselage sides 76 mottled with 82
External armour plate
ETC 501 rack on this aircraft set up to carry bombs
ETC 504 torpedo rack on FW 190F-8/U14 did away with the need for the lengthened tail wheel leg
Spinner R spiral Y

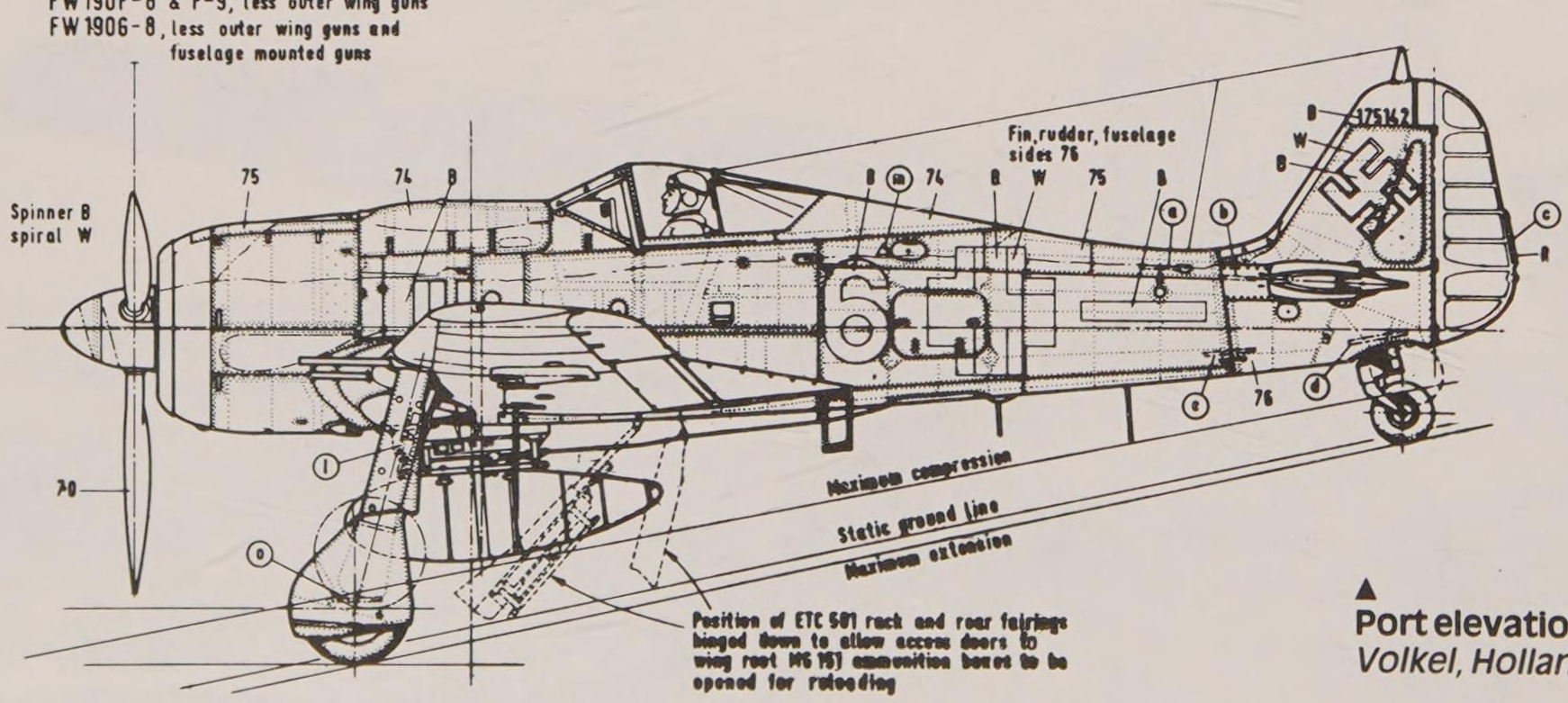


Tail unit fitted to FW 190F-8/U3 showing lengthened tail wheel in the retracted position and rudder moved further aft

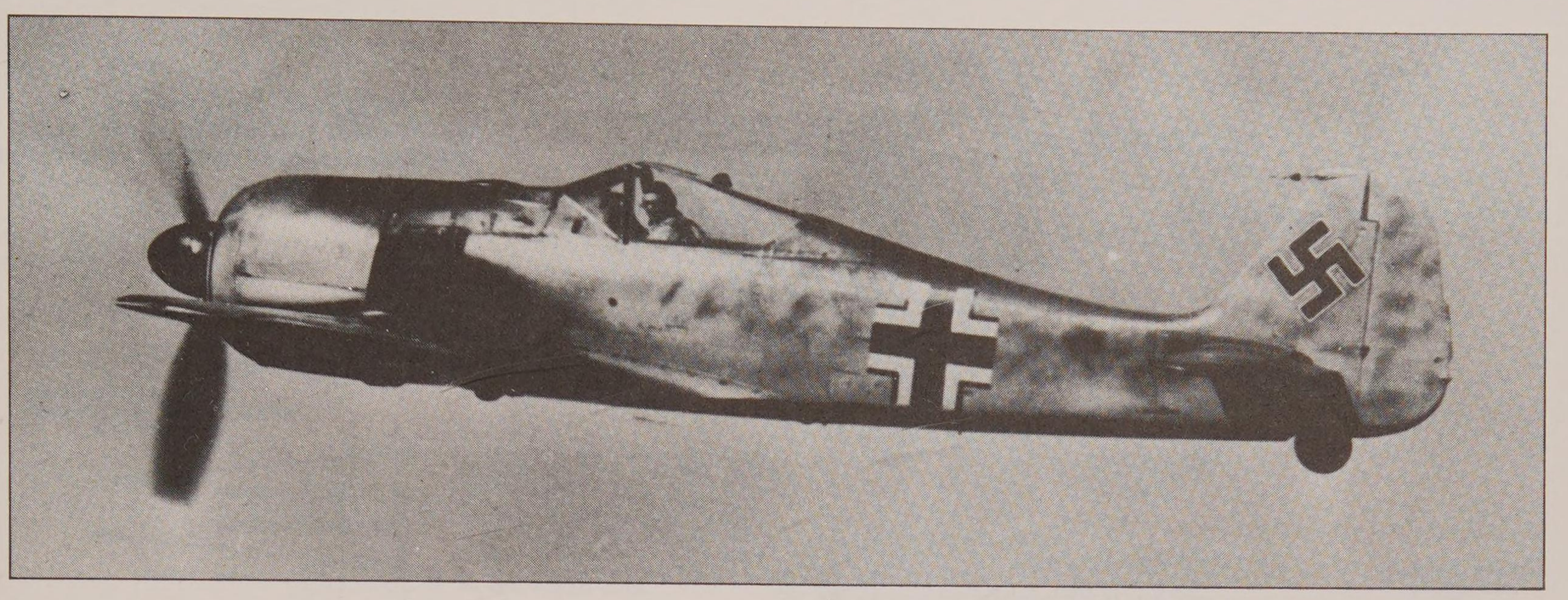
Scrap starboard elevation, Fw 190F-8/U3 ►
Showing revised bomb rack


Broad chord wooden propellers were fitted to a few late production aircraft
LT 950
BT 1400
Lower fin folded to increase ground clearance
FW 190F-8/U3 with revised bomb rack

The view below serves for
FW 190A-8 & A-9
FW 190F-8 & F-9, less outer wing guns
FW 1906-8, less outer wing guns and fuselage mounted guns

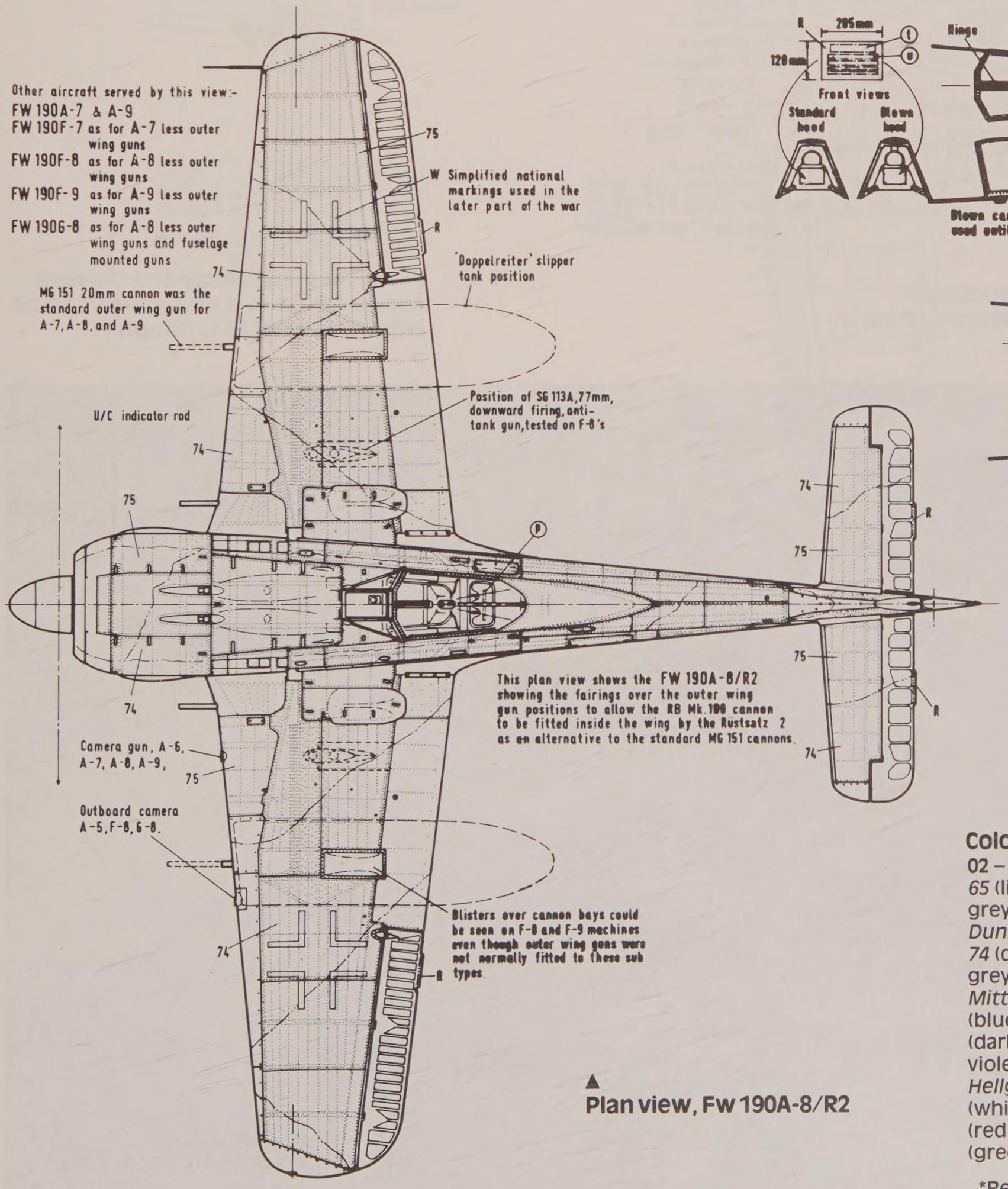

Spinner B spiral W
Fin, rudder, fuselage sides 76
Maximum compression
Static ground line
Maximum extension
Position of ETC 501 rack and rear fairings hinged down to allow access doors to wing root MG 151 ammunition boxes to be opened for reloading

▲
Port elevation, Fw 190A-8
Volkel, Holland, autumn 1944

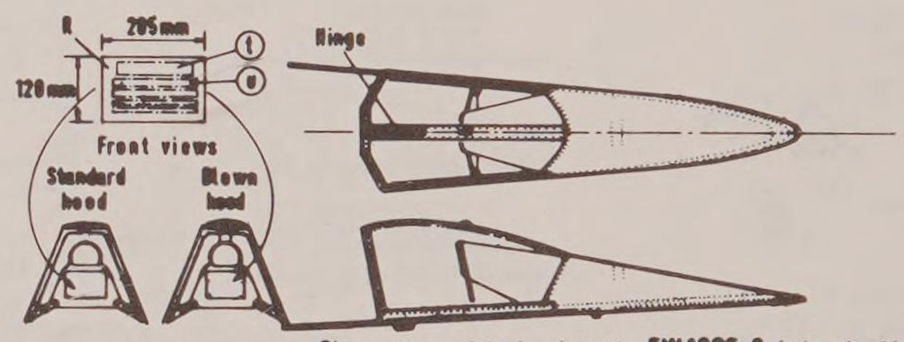


▲
An early-production 190 up on trials, 7 September 1942. Within six months, the Focke-Wulf Fw 190 would account for almost half of Germany's fighter production. (J Brindley)

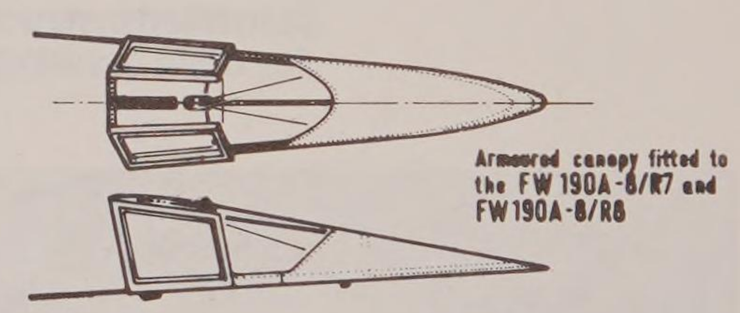
DRAWN BY A L BENTLEY


Other aircraft served by this view:-
FW 190A-7 & A-9
FW 190F-7 as for A-7 less outer wing guns
FW 190F-8 as for A-8 less outer wing guns
FW 190F-9 as for A-9 less outer wing guns
FW 190G-8 as for A-8 less outer wing guns and fuselage mounted guns
MG 151 20mm cannon was the standard outer wing gun for A-7, A-8, and A-9
W Simplified national markings used in the later part of the war
'Doppelreiter' slipper tank position
Position of SG 113A, 77mm, downward firing, anti-tank gun, tested on F-8's
U/C indicator rod
Camera gun, A-6, A-7, A-8, A-9,
Outboard camera A-5, F-8, G-8.
Blisters over cannon bays could be seen on F-8 and F-9 machines even though outer wing guns were not normally fitted to these sub types.
This plan view shows the FW 190A-8/R2 showing the fairings over the outer wing gun positions to allow the RB Mk.108 cannon to be fitted inside the wing by the Rüstsatz 2 as an alternative to the standard MG 151 cannons.
74
75
R
P

▲
Plan view, Fw 190A-8/R2



Blown canopy introduced on the FW 190F-2 but not widely used until the introduction of the FW 190F-8



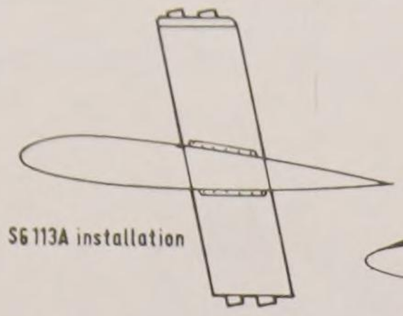
Armoured canopy fitted to the FW 190A-8/R7 and FW 190A-8/R8

▲
Scrap views
Canopy details

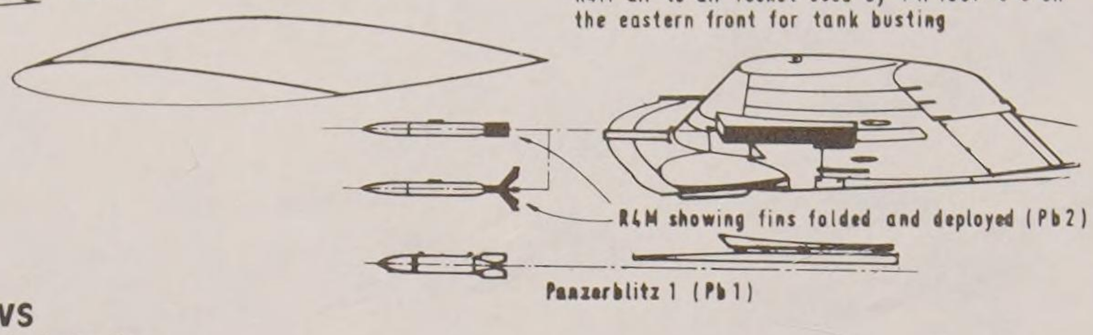
Colour code

02 – *RLM Grau* (light slate grey); **63** – *Hellblau 65* (light blue); **66** – *Schwarzgrau 66* (black-grey); **70** – *Schwarzgrün 70* (black-green); **71** – *Dunkelgrün 71* (dark green); **74** – *Dunkelgrau 74* (dark grey); **75** – *Mittelgrau 75* (medium grey); **76** – *Hellgrau 76* (light grey); **77** – *Mittelgrau 77* (medium grey); **78** – *Blau 78* (blue); **79** – *Gelb 79* (tan); **80** – *Dunkelgrün 80* (dark green); **81** – *Braunviolett* (brown-violet*); **82** – *Dunkelgrün 82* (dark green*); **83** – *Hellgrün 83* (light green*); **W** – *Weiss 21* (white**); **B** – *Schwarz 22* (black**); **R** – *Rot 23* (red**); **BL** – *Blau 24* (blue**); **G** – *Grün 25* (green**); **Y** – *Gelb 27* (yellow**).

*Replacement colours for *74* and *75*.
**Individual aircraft markings colours.

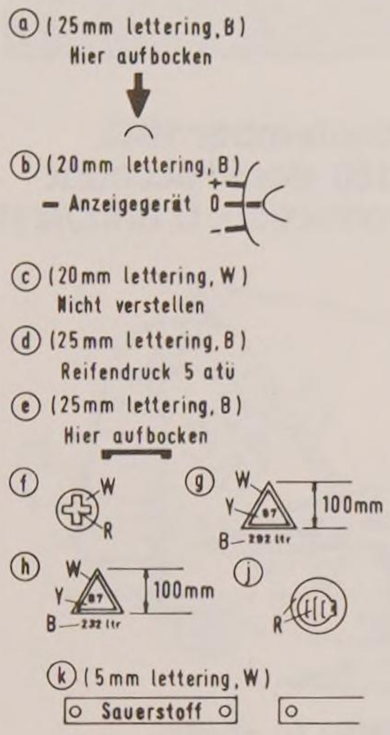


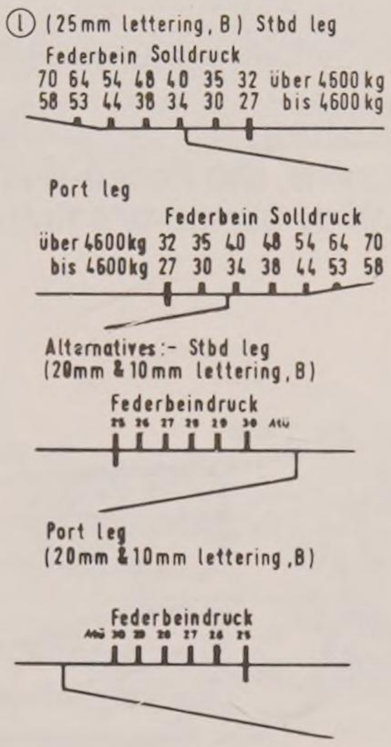
Section through Doppelreiter slipper tank tested on FW 190A-8 Works No. 380394 coded 7+

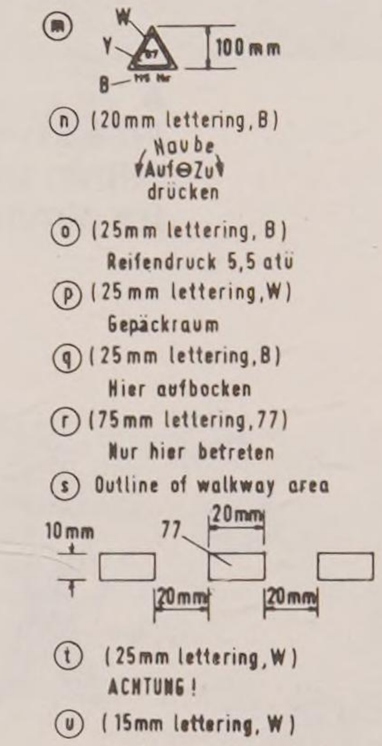


Shown below are the racks for the Panzerblitz 1 (Pb 1) 78mm modified army rocket projectile and its successor the Panzerblitz 2 (Pb 2) a modified R4M air to air rocket used by FW 190F-9's on the eastern front for tank busting

▲
Scrap views
Armament details

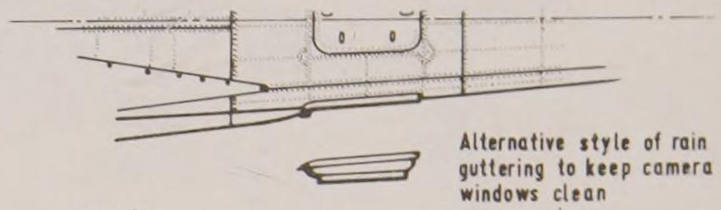



(l) (25mm lettering, B) Stbd leg
Federbein Solldruck
70 64 54 48 40 35 32 über 4600 kg
58 53 44 38 34 30 27 bis 4600 kg
Port leg
Federbein Solldruck
über 4600kg 32 35 40 48 54 64 70
bis 4600kg 27 30 34 38 44 53 58
Alternatives:- Stbd leg
(20mm & 10mm lettering, B)
Federbeindruck
Port Leg
(20mm & 10mm lettering, B)
Federbeindruck

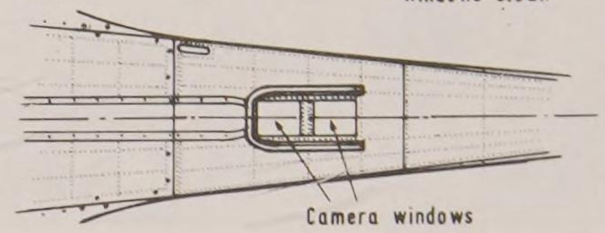


▲
Stencilled instructions
See main drawings for location

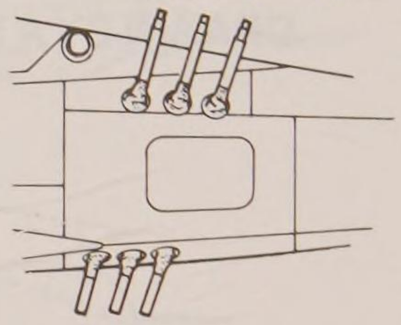
Scrap views, Fw 190A-5/U4
Probable layout (two 12.5/7×9 cameras in rear fuselage)
▼



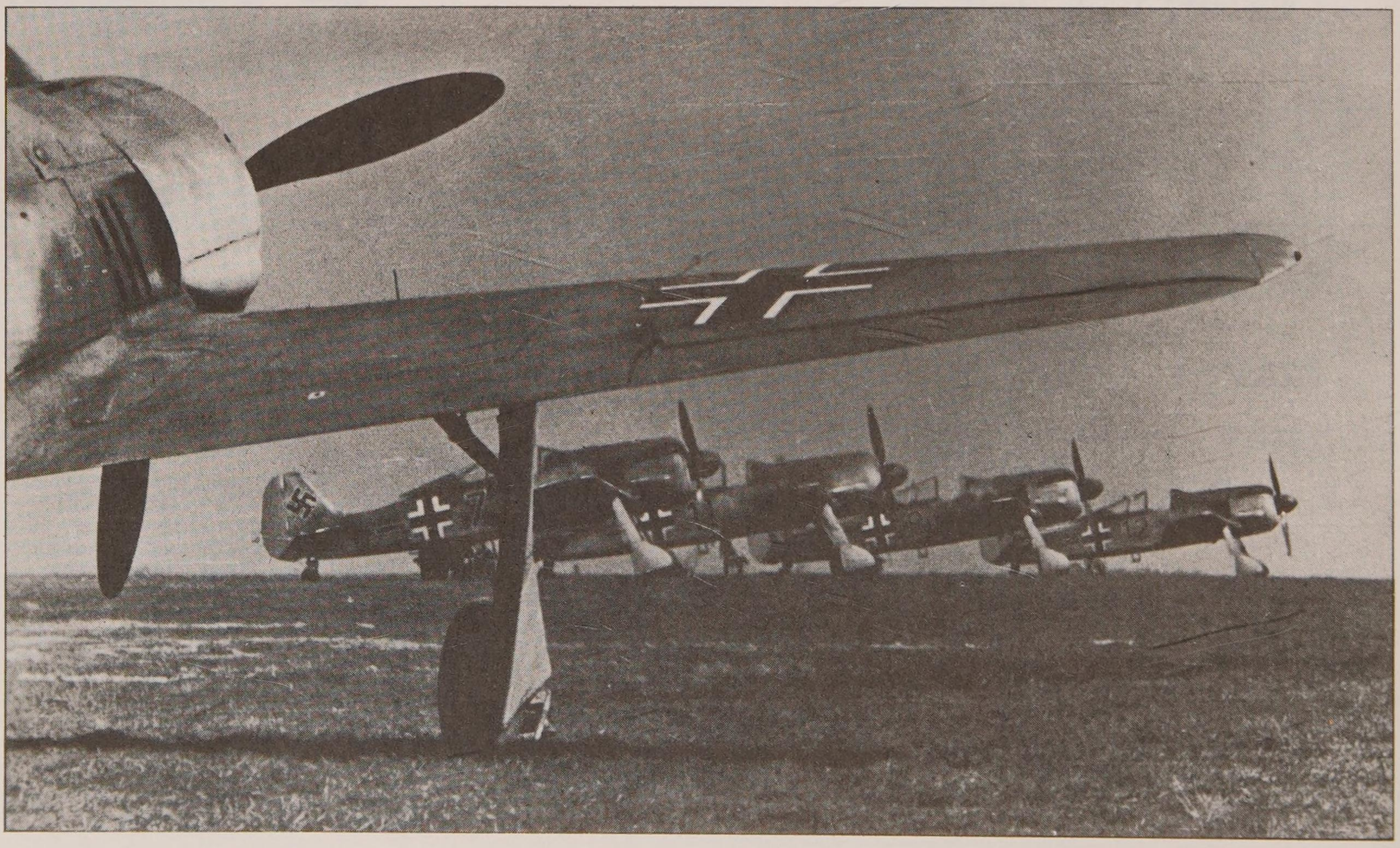
Alternative style of rain guttering to keep camera windows clean



SG 116 upwards firing weapons system tested on a FW 190A-8



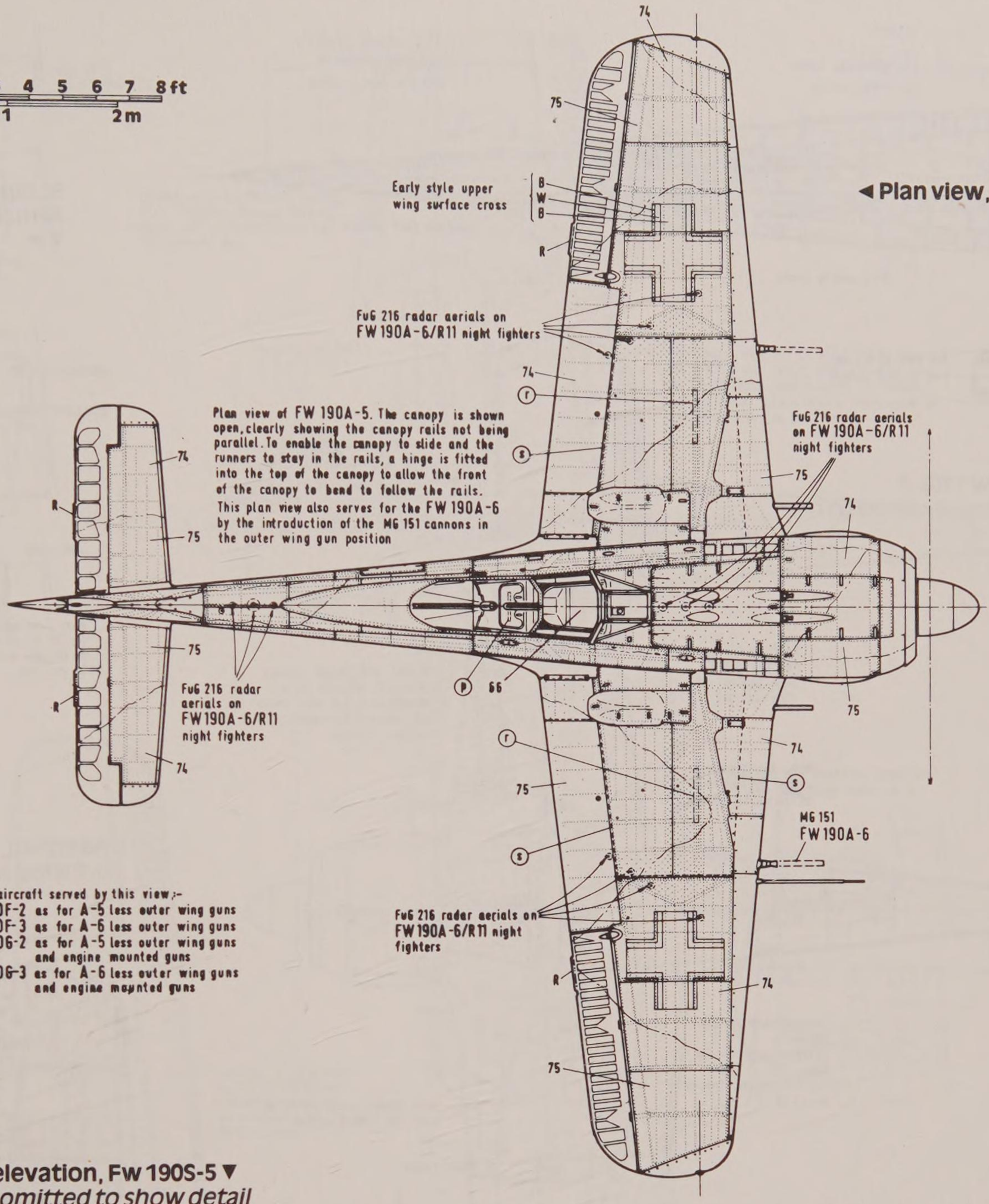
Fw 190As stand ready at a Channel coast airfield. The unit appears to be either *JG2* or *JG26*. (J Brindley)
▼



Scale

0 1 2 3 4 5 6 7 8 ft

0 1 2 m

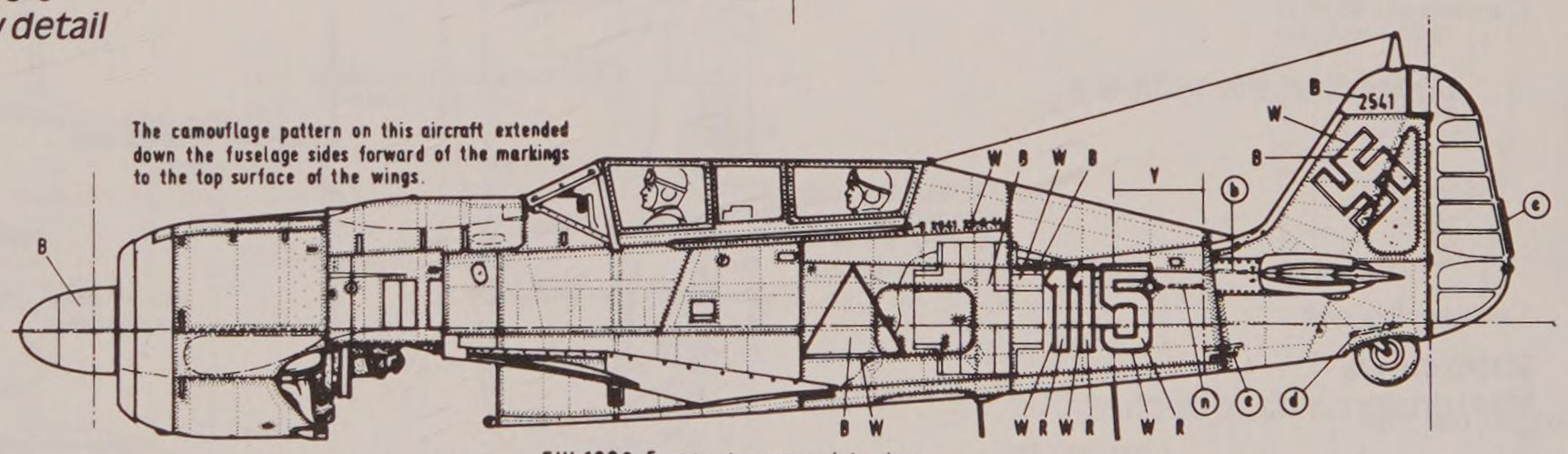

74
75
Early style upper wing surface cross
B
W
B
R
FuG 216 radar aerials on FW 190A-6/R11 night fighters
74
r
s
Plan view of FW 190A-5. The canopy is shown open, clearly showing the canopy rails not being parallel. To enable the canopy to slide and the runners to stay in the rails, a hinge is fitted into the top of the canopy to allow the front of the canopy to bend to follow the rails. This plan view also serves for the FW 190A-6 by the introduction of the MG 151 cannons in the outer wing gun position
FuG 216 radar aerials on FW 190A-6/R11 night fighters
75
74
R
75
FuG 216 radar aerials on FW 190A-6/R11 night fighters
74
P
66
r
75
s
MG 151
FW 190A-6
s
FuG 216 radar aerials on FW 190A-6/R11 night fighters
R
74
75

◀ **Plan view, Fw 190A-5**

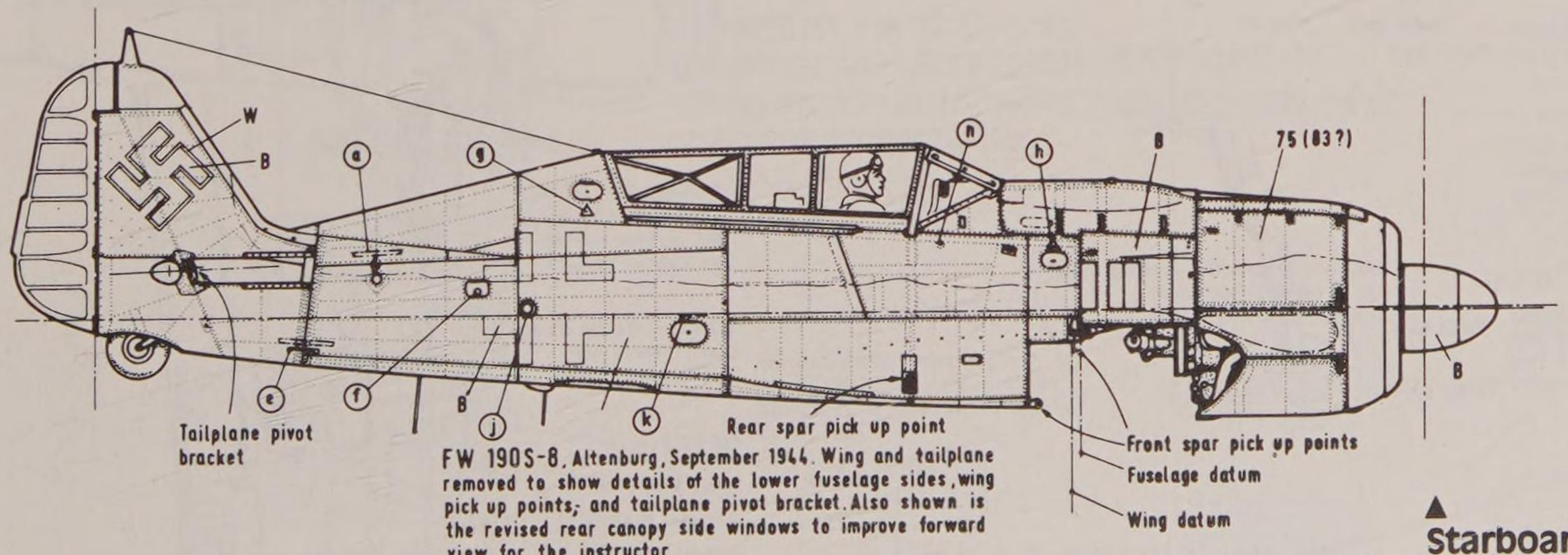
Other aircraft served by this view:-

FW 190F-2 as for A-5 less outer wing guns
FW 190F-3 as for A-6 less outer wing guns
FW 190G-2 as for A-5 less outer wing guns and engine mounted guns
FW 190G-3 as for A-6 less outer wing guns and engine mounted guns

Port elevation, Fw 190S-5 ▼
Wing omitted to show detail

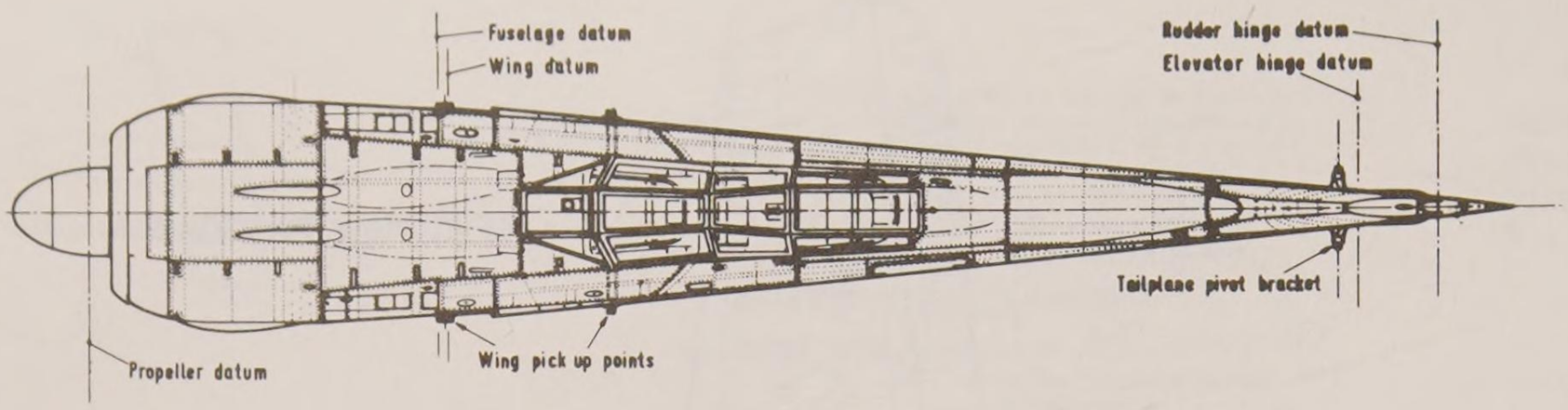


FW 190S-5 with wing removed to show details of the wing root fairings. Armament was not normally fitted to two seat aircraft

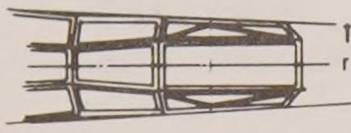


FW 190S-8, Altenburg, September 1944. Wing and tailplane removed to show details of the lower fuselage sides, wing pick up points; and tailplane pivot bracket. Also shown is the revised rear canopy side windows to improve forward view for the instructor

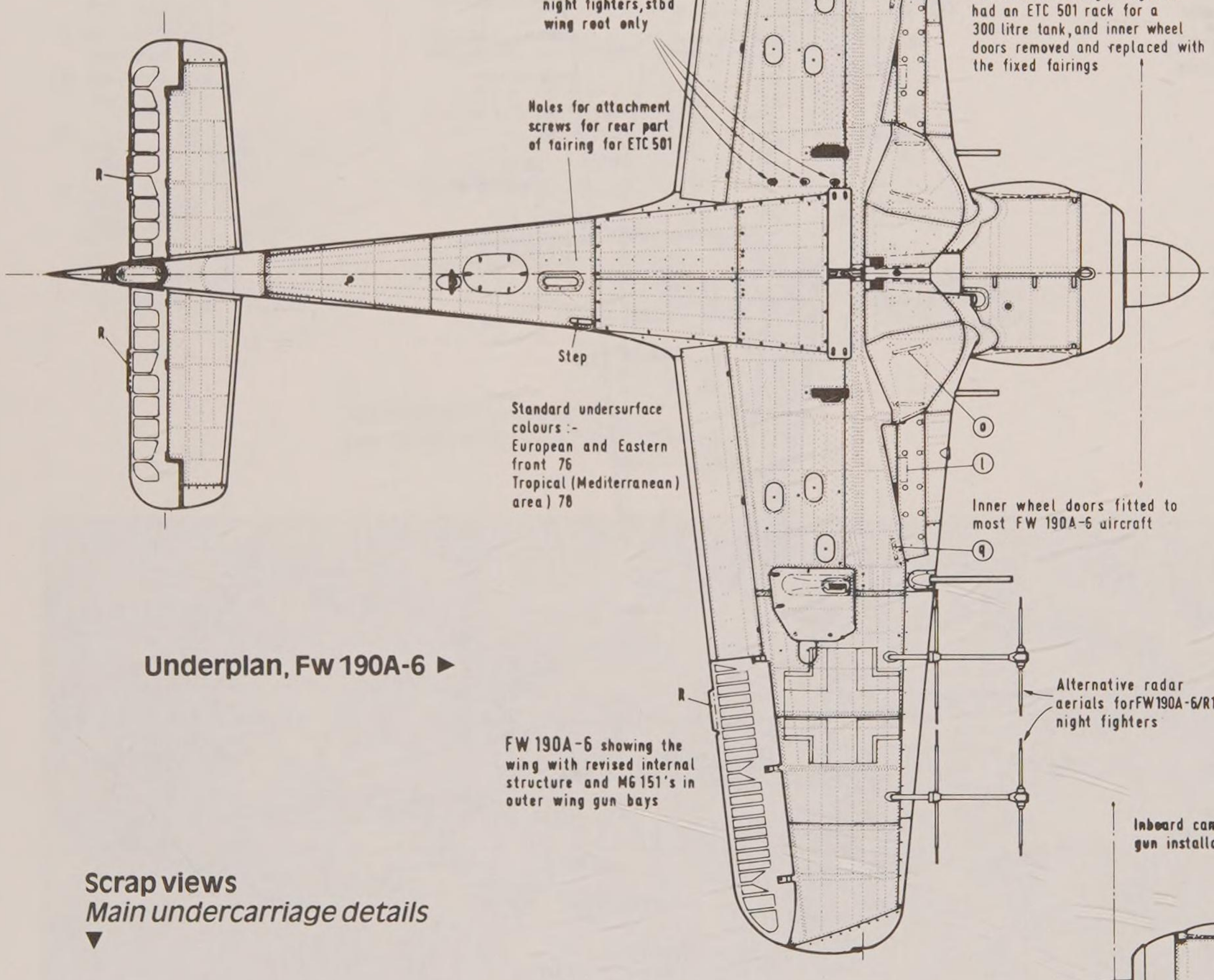
▲
Starboard elevation, Fw 190S-8
Altenburg, September 1944

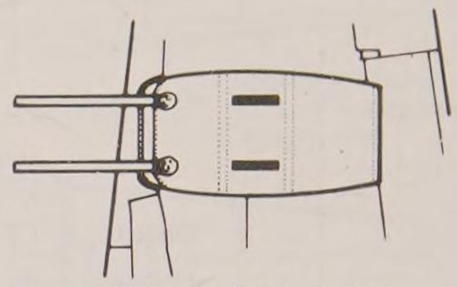


Scrap views
Armament details
▼►

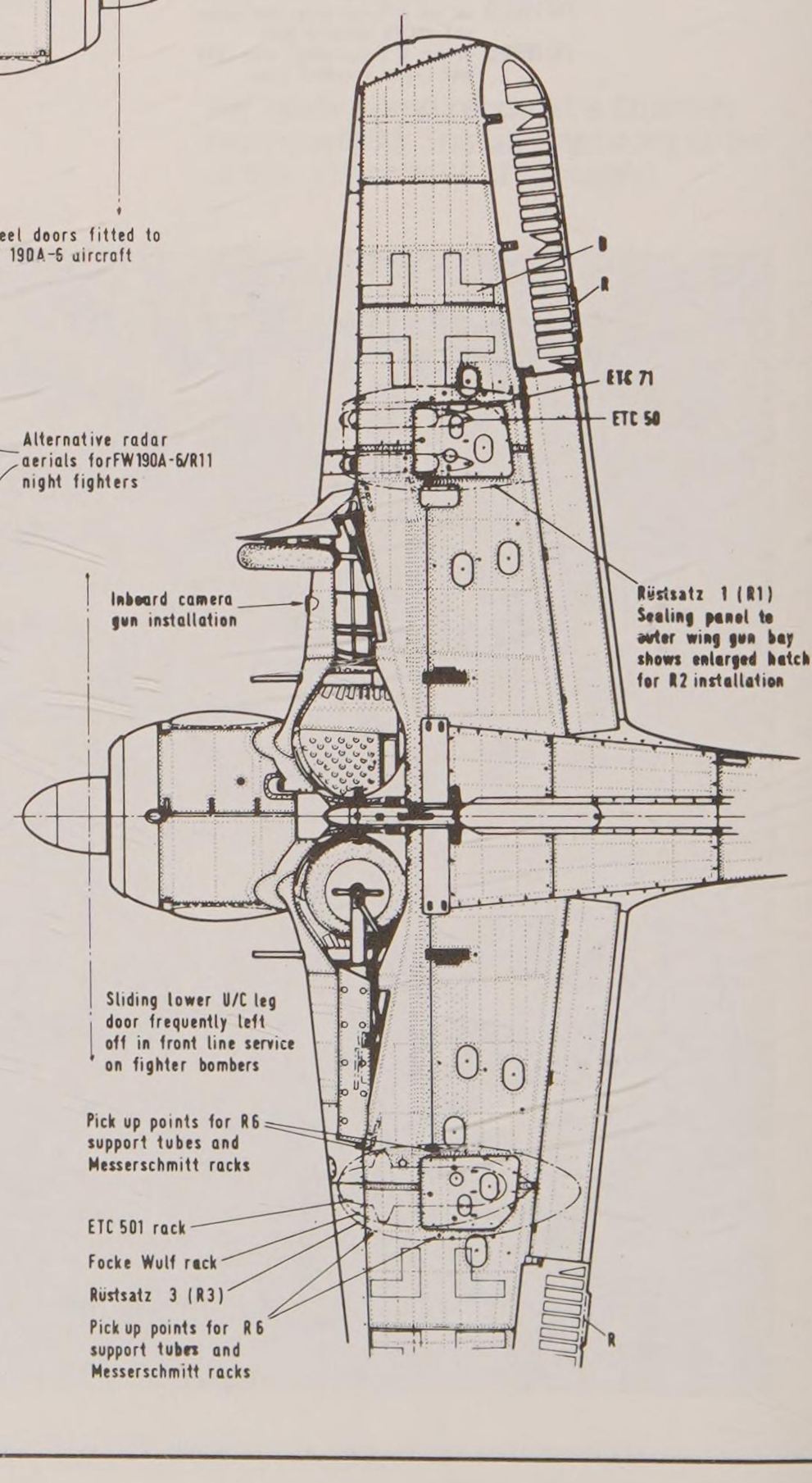


▲
Scrap plan view, Fw 190S-5
Armament not normally fitted to two-seat aircraft



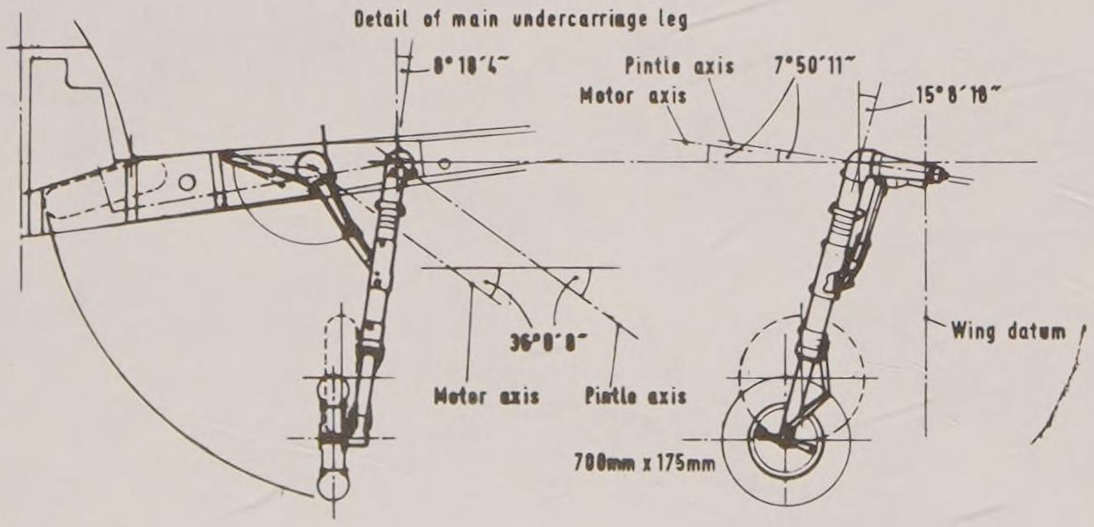


Underplan, Fw 190F-8, G-8
Port wing and fuselage rack
▼



Underplan, Fw 190A-6 ►

Scrap views
Main undercarriage details
▼



Underplan, Fw 190A-5, F-2, G-2 ►
Starboard wing

Front bomb support arms retracted

ETC 50
Bomb racks
F-3, F-8, G-8.

ETC 71 Bomb racks, F-8, F-9.

Panzerblitz 1 (PB1) rocket launching rails, F-8

Panzerblitz 2 (PB2) rocket launching rails, F-8.

Early camera gun installation

Leading edge of FW 190A-5/U2 night intruder showing landing lights and outboard mounting for camera gun

Tropical air filters A-5, F-2, F-3, F-8, G-2, G-8.

Scale
0 1 2 3 4 5 6 7 8 ft
0 1 2 m

Underplan, Fw 190A-5/Trop

Underneath view of FW 190A-5/Tp showing the ETC 501 rack fitted with mounting bars for the 300 litre tank, tropical air filters, and the MG FF 20mm cannon installation in the outer wing gun position

Focke Wulf and Weserflug racks for 300 litre long range tanks, A-5

Messerschmitt racks for 300 litre long range tanks, A-5, F-2, F-3, F-8, G-2, G-8.

Rüstsatz 6 (R6)
A-5, A-6, A-7, A-8.

Spent shell case chute for RB Mk 108 30mm cannon — blanked off when fitted with MG 151 cannon

Lower fuselage access door introduced on the FW 190A-7 series

Experimental installation of RB Mk 108 30mm cannon in underwing fairings

Spent shell case chute

Flash suppresser horizontal on early installations

Spent shell case chute

Rüstsatz 3 (R3) — early installation

Link chute

Flash suppresser vertical and gun barrel faired in on final installation

Spent shell case chute

Rüstsatz 3 (R3) late installation with rear fairing shown removed

Link chute

Underplan, Fw 190A-8/R2

Showing Rüstsatz 2 installation of RB MK 108 cannon in outer wing gun bay, with enlarged access doors

Starboard outer wing gun bay for MG 151 20mm cannon fitted to aircraft with enlarged opening to gun bay

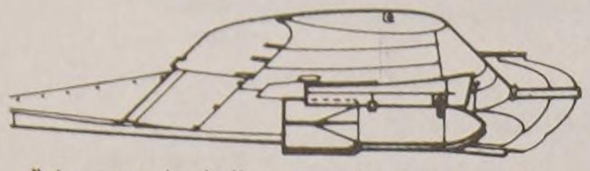
Link chute

ETC 501 wing rack shown with mounting bars for 300 litre long range tanks, A-5, G-3, G-8.

ETC 501 wing rack shown to carry SC 250kg bomb
A-5, G-3, G-8.

Scrap views
Armament details

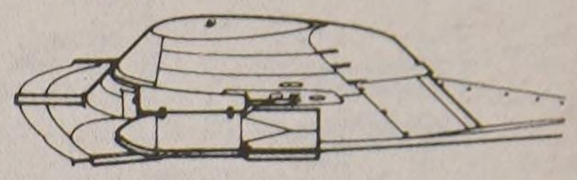
SC 50 Bombs on ETC 50 racks

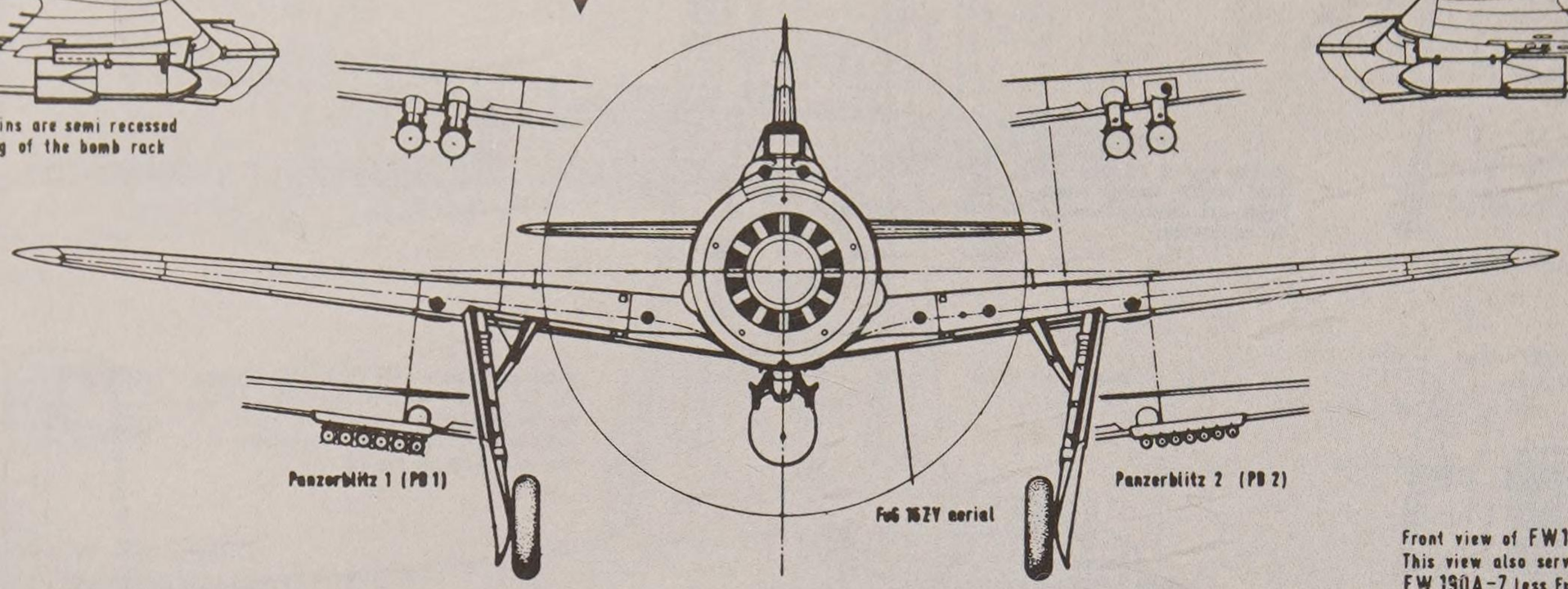


Note:- upper bomb fins are semi recessed in rear fairing of the bomb rack

Front elevation, Fw 190A-8/R2

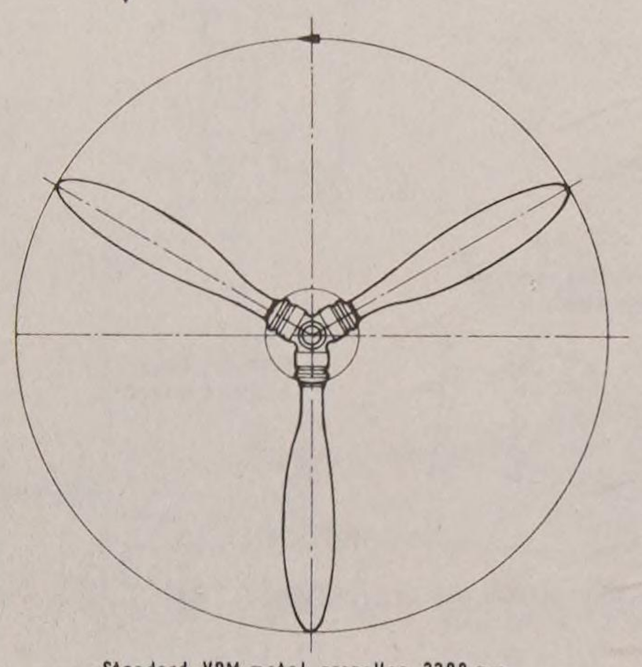
SC 50 Bombs on ETC 71 racks



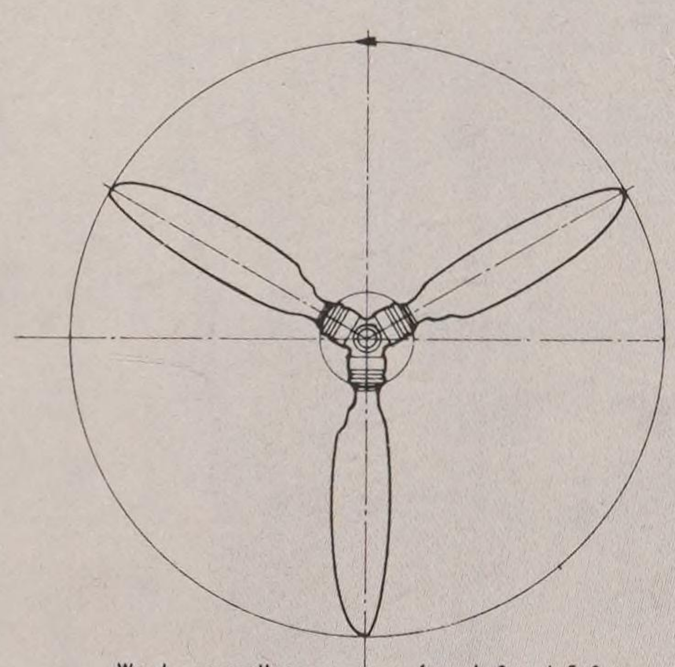


Front view of FW190A-8/R2
This view also serves
FW 190A-7 less FuG 16ZY aerial
FW 190A-9
FW 190F-8 & F-9 less outer wing guns
FW 190G-8 less outer wing guns and engine mounted guns

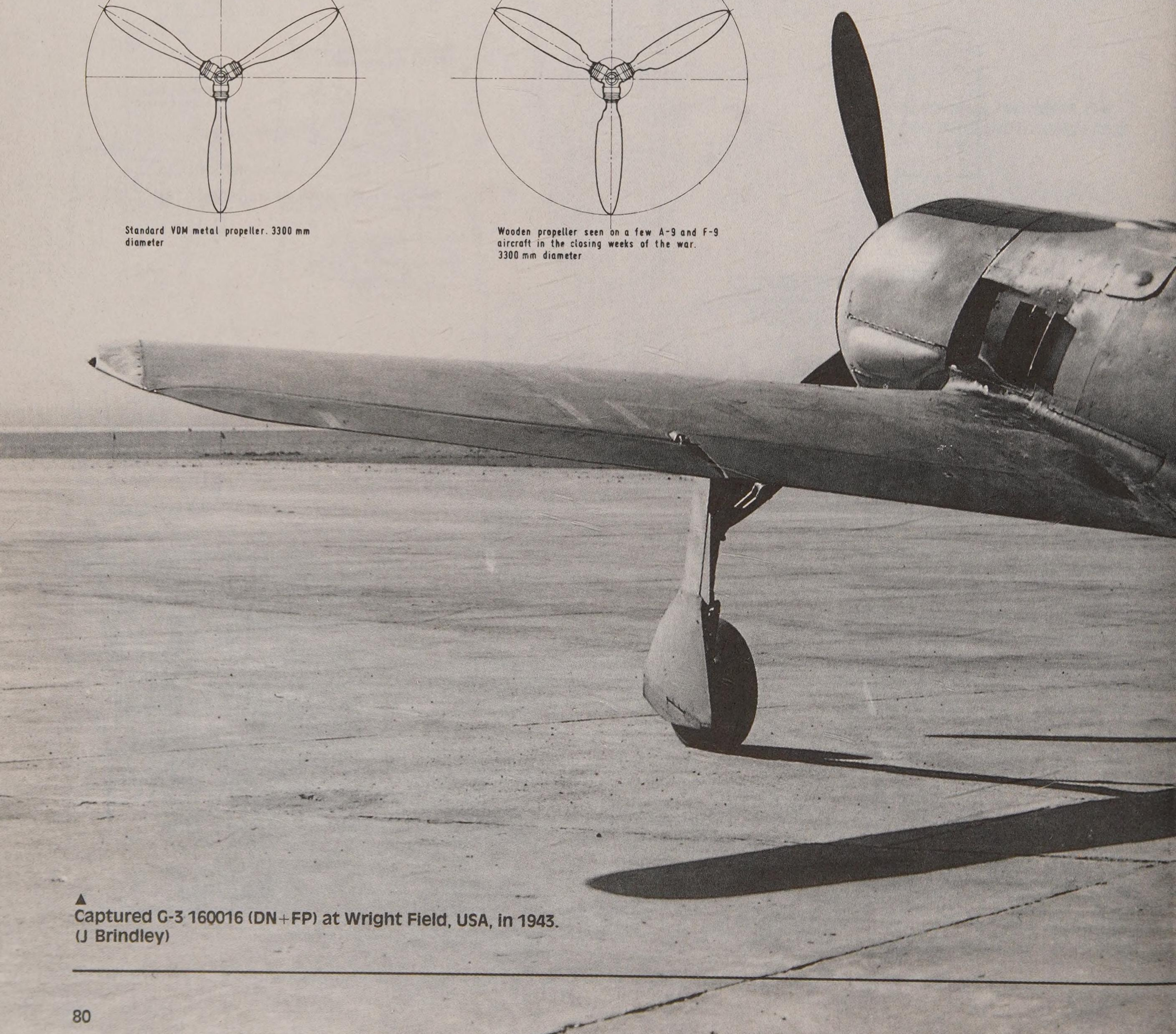
Scrap front elevations
Propeller details



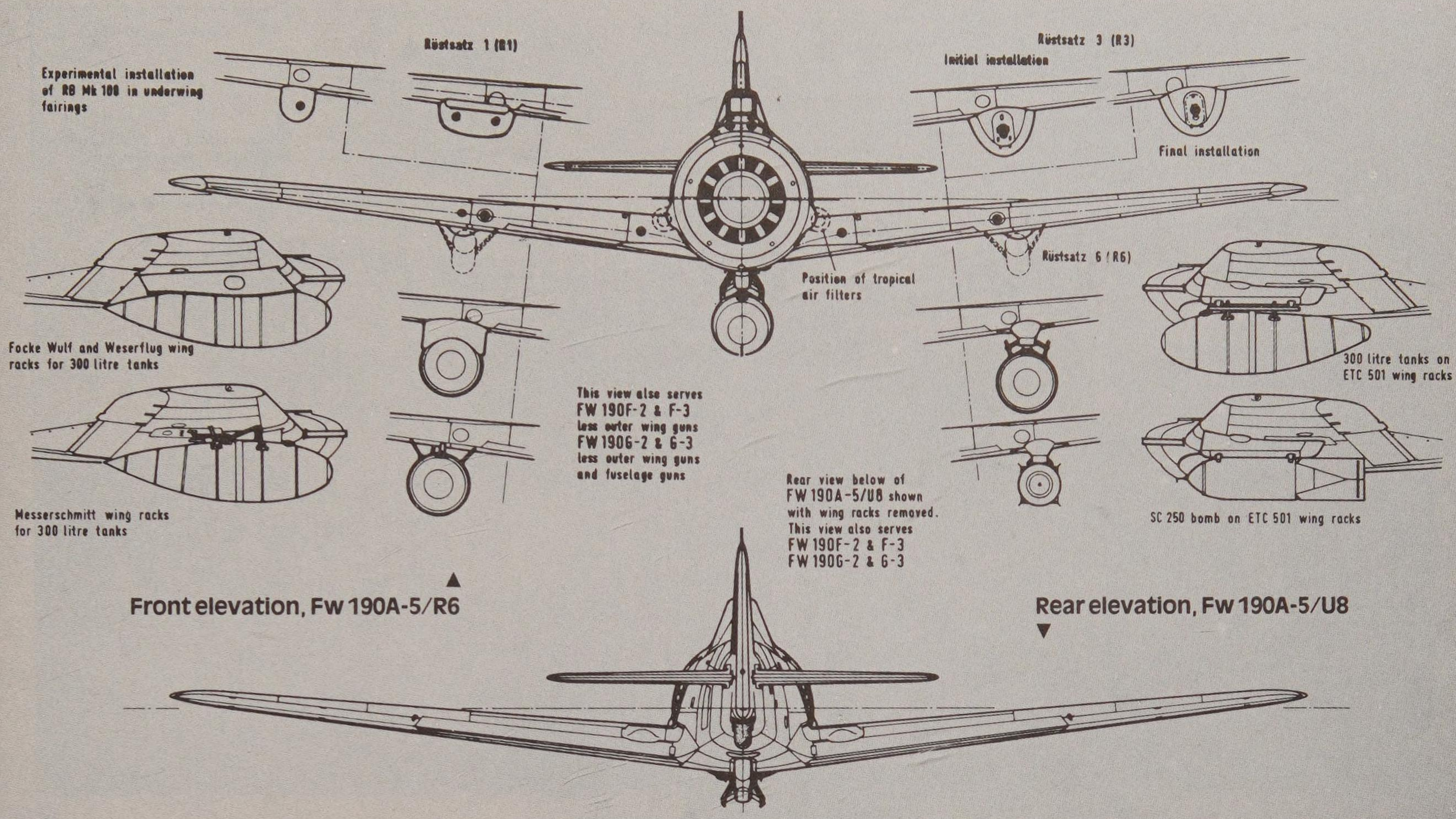
Standard VDM metal propeller. 3300 mm diameter



Wooden propeller seen on a few A-9 and F-9 aircraft in the closing weeks of the war. 3300 mm diameter

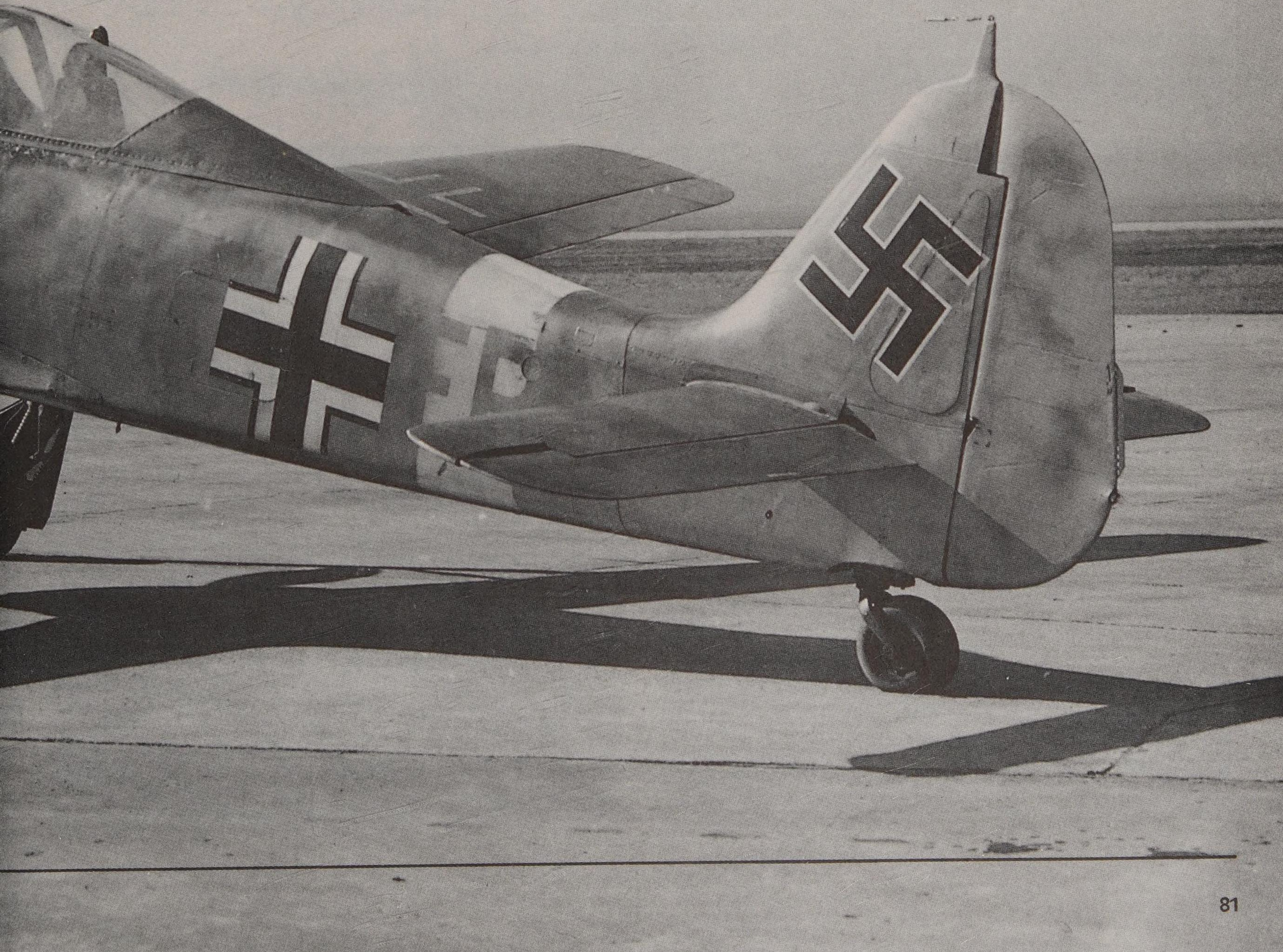


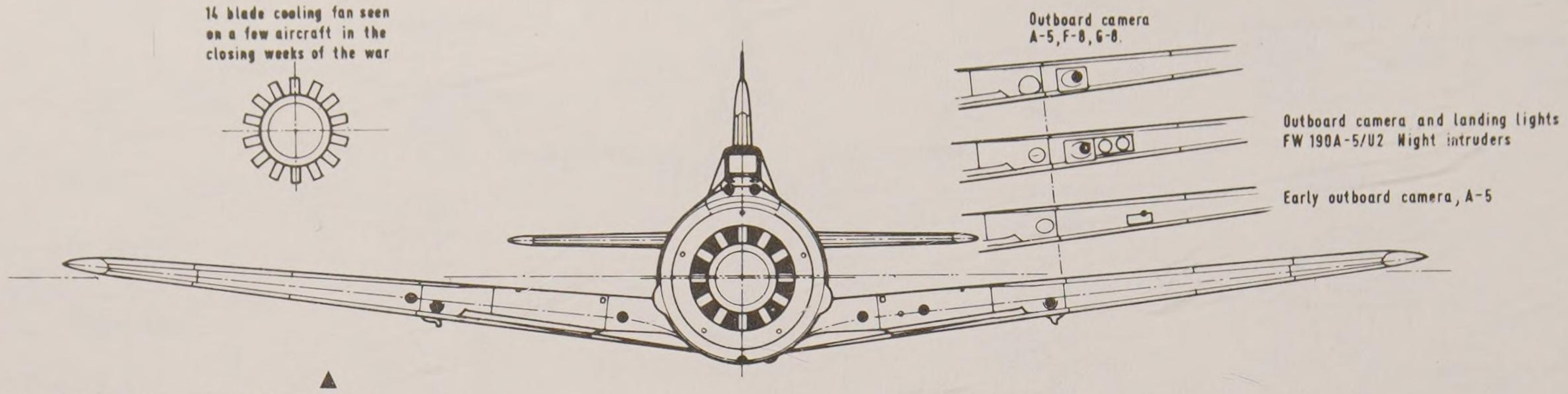
▲
Captured G-3 160016 (DN+FP) at Wright Field, USA, in 1943. (J Brindley)


Experimental installation of RB Mk 108 in underwing fairings
Rüstsatz 1 (R1)
Rüstsatz 3 (R3)
Initial installation
Final installation
Rüstsatz 6 (R6)
Position of tropical air filters
Focke Wulf and Weserflug wing racks for 300 litre tanks
Messerschmitt wing racks for 300 litre tanks
This view also serves
FW 190F-2 & F-3
less outer wing guns
FW 190G-2 & G-3
less outer wing guns
and fuselage guns
Rear view below of
FW 190A-5/U8 shown
with wing racks removed.
This view also serves
FW 190F-2 & F-3
FW 190G-2 & G-3
300 litre tanks on ETC 501 wing racks
SC 250 bomb on ETC 501 wing racks

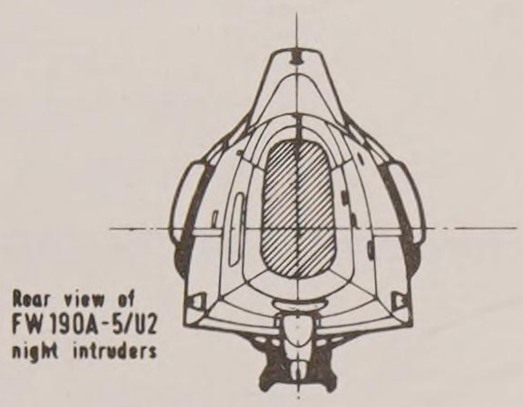
Front elevation, Fw 190A-5/R6

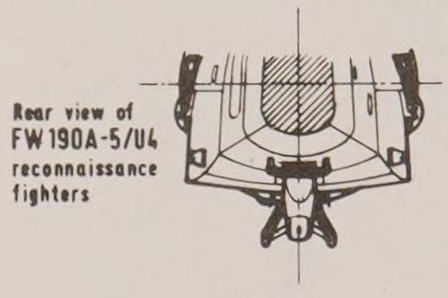
Rear elevation, Fw 190A-5/U8

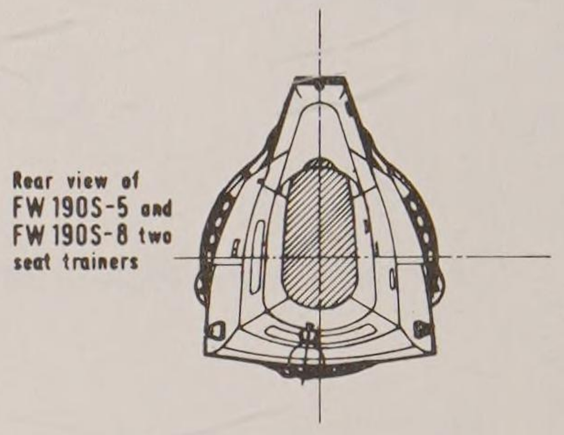


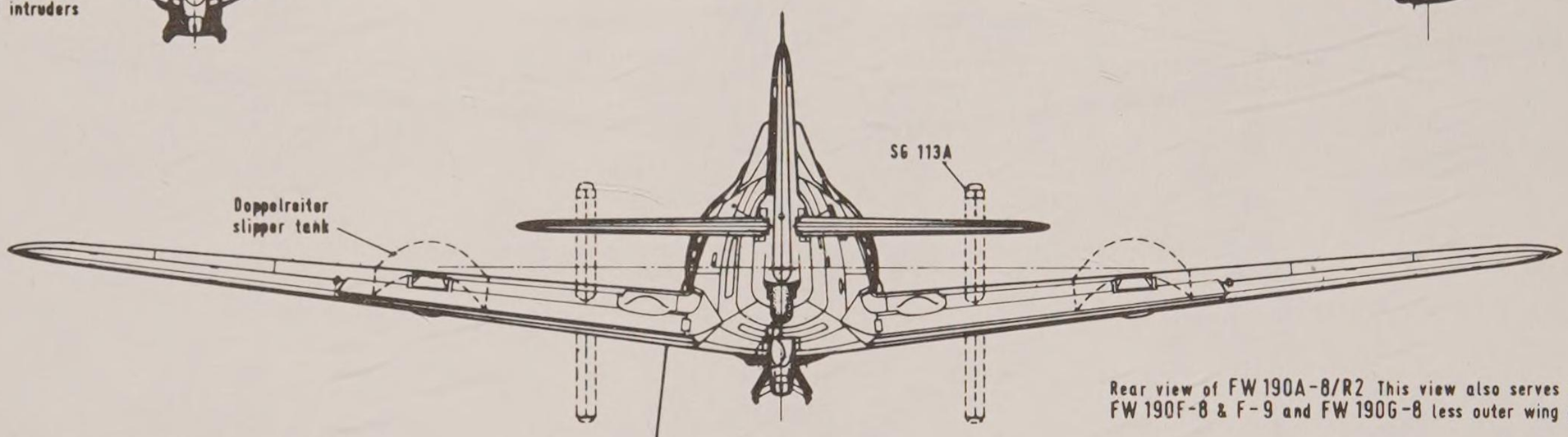

14 blade cooling fan seen on a few aircraft in the closing weeks of the war
Outboard camera A-5, F-8, G-8.
Outboard camera and landing lights FW 190A-5/U2 Night intruders
Early outboard camera, A-5

▲
Front elevation, Fw 190A-6





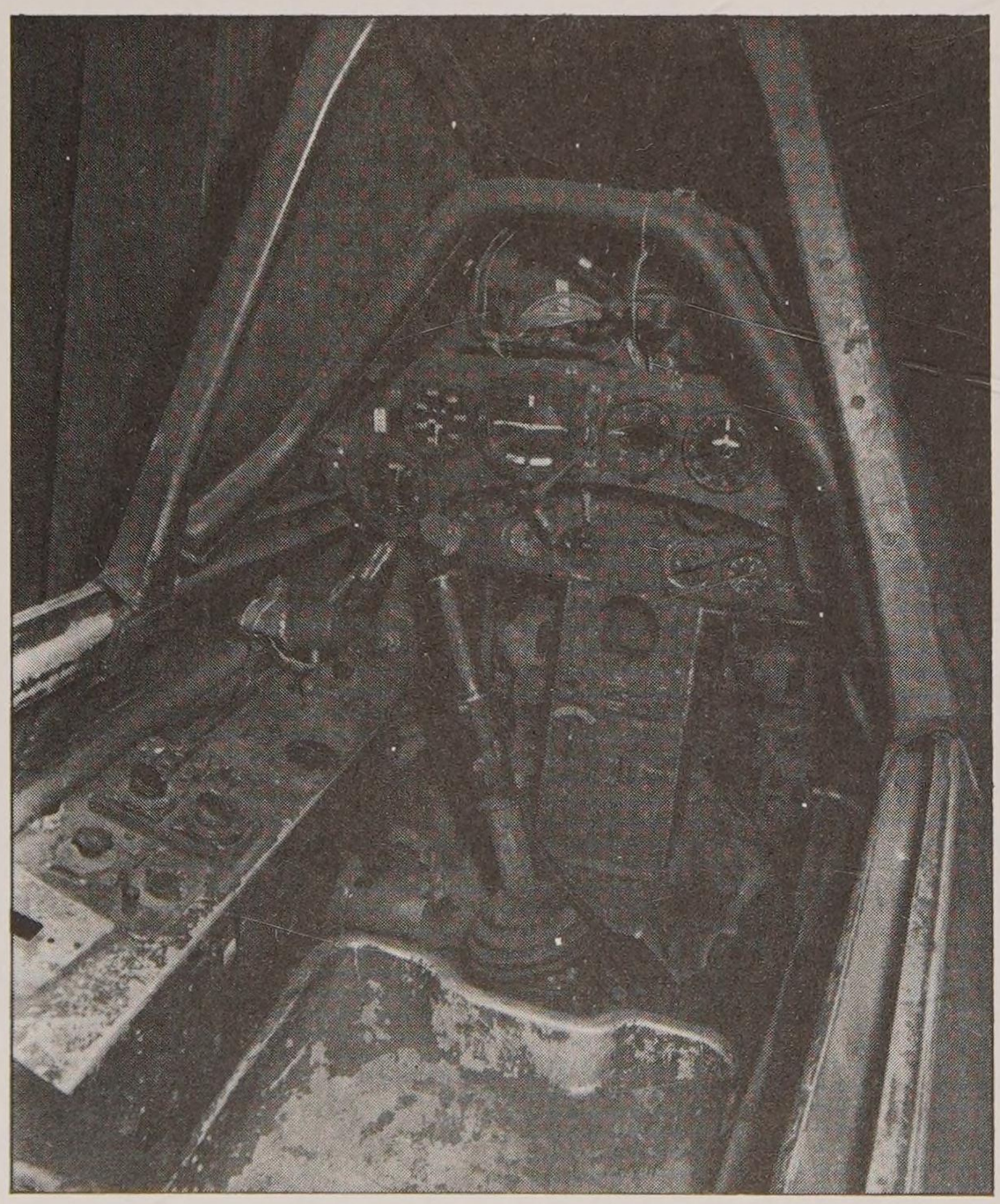


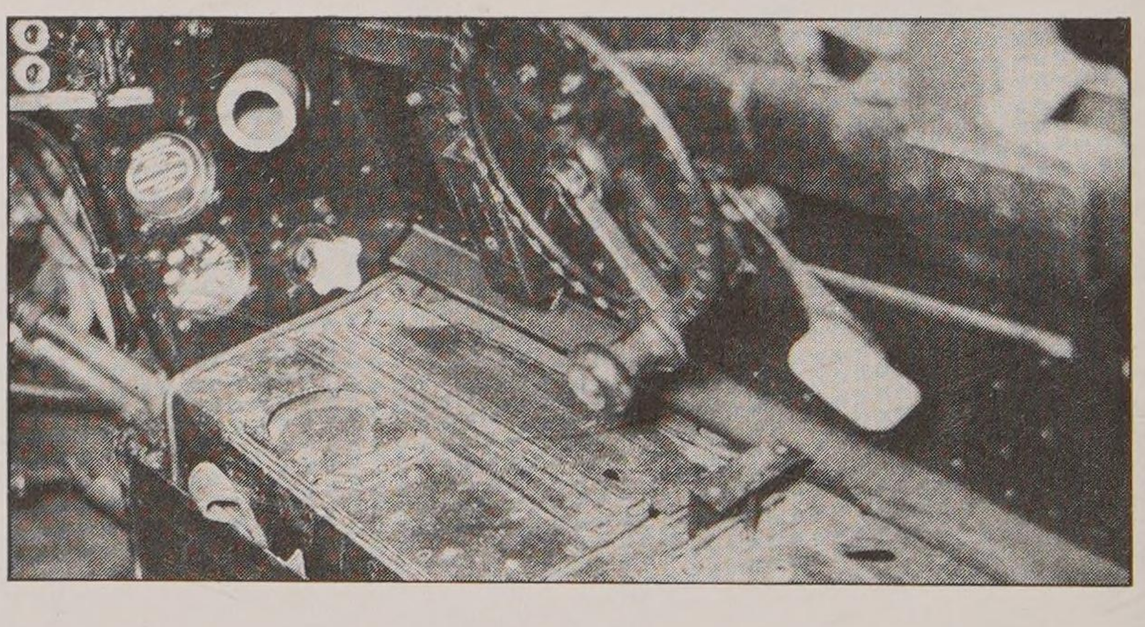


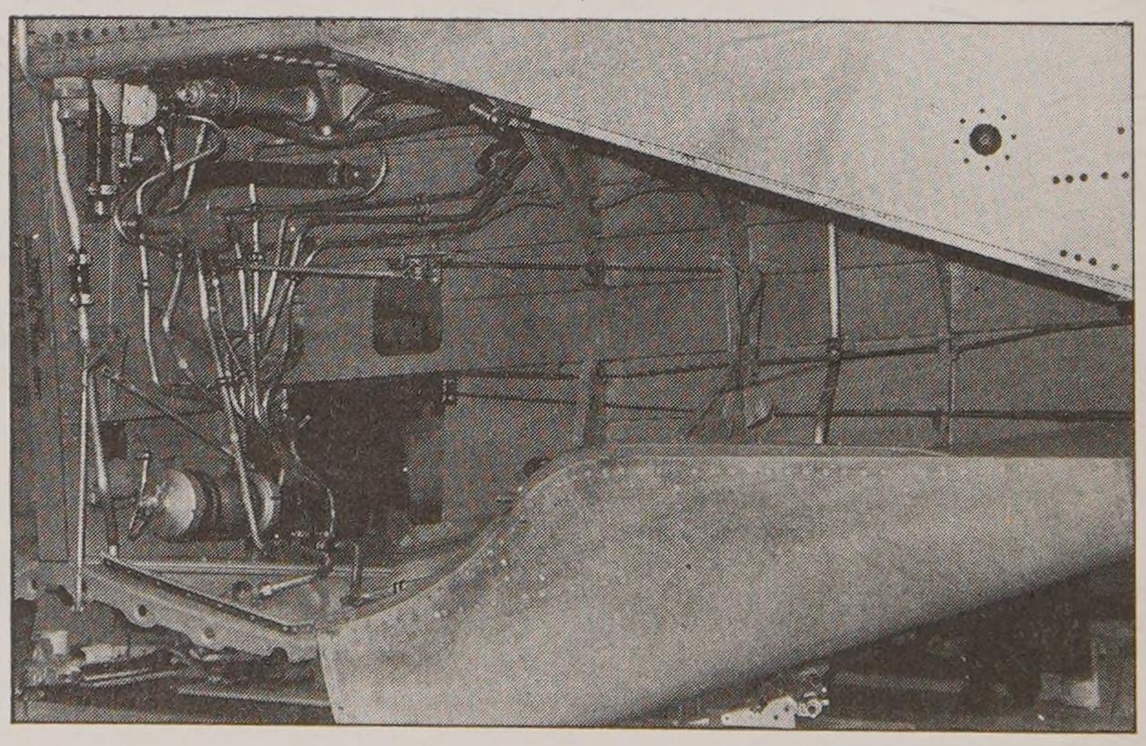
Rear view of FW 190A-8/R2 This view also serves for FW 190A-7, 9; FW 190F-8 & F-9 and FW 190G-8 less outer wing guns

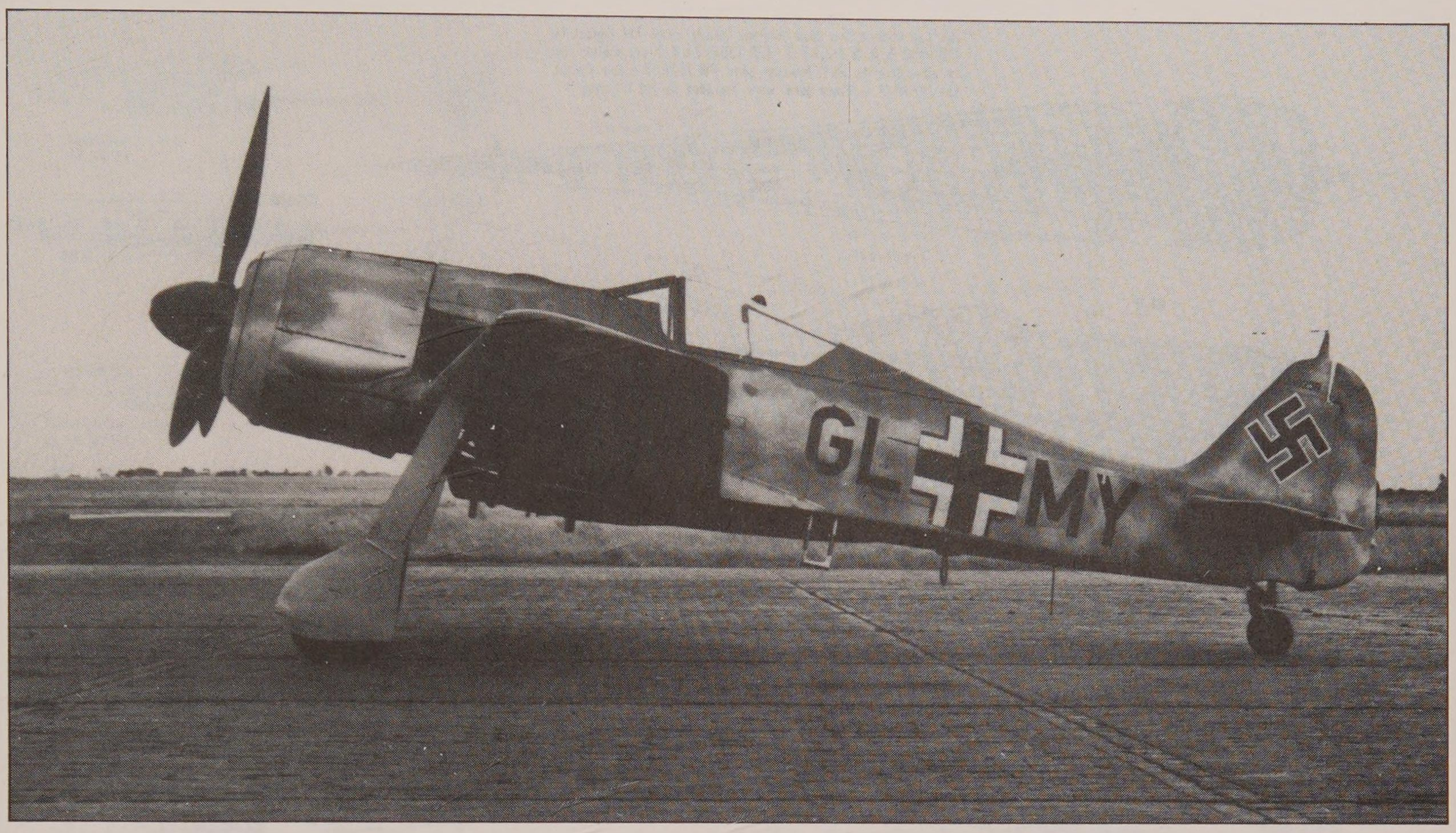
▲
Rear elevation, Fw 190A-8/R2

Cockpit interior details of Fw 190s undergoing postwar restoration, with (lower right) view showing starboard wheel well.
▼

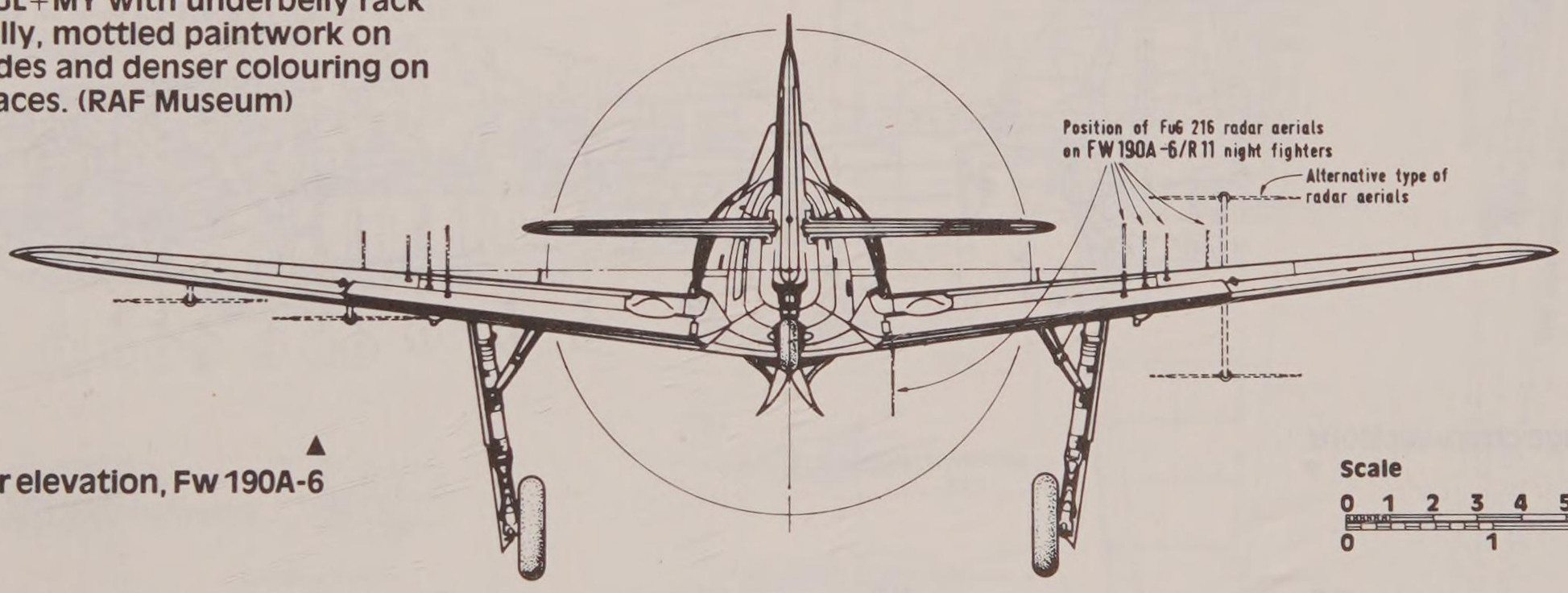






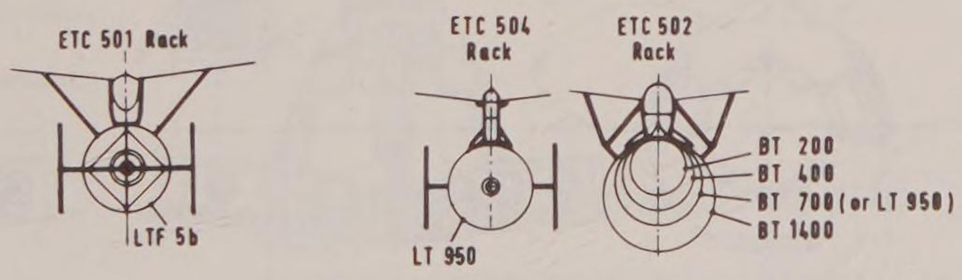


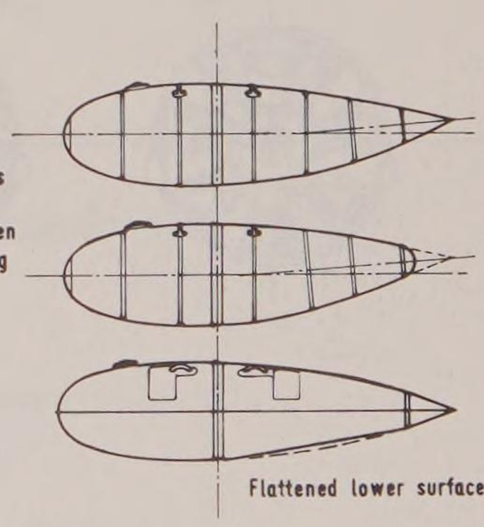
▲
Fw 190A-4 GL+MY with underbelly rack and, typically, mottled paintwork on fuselage sides and denser colouring on upper surfaces. (RAF Museum)



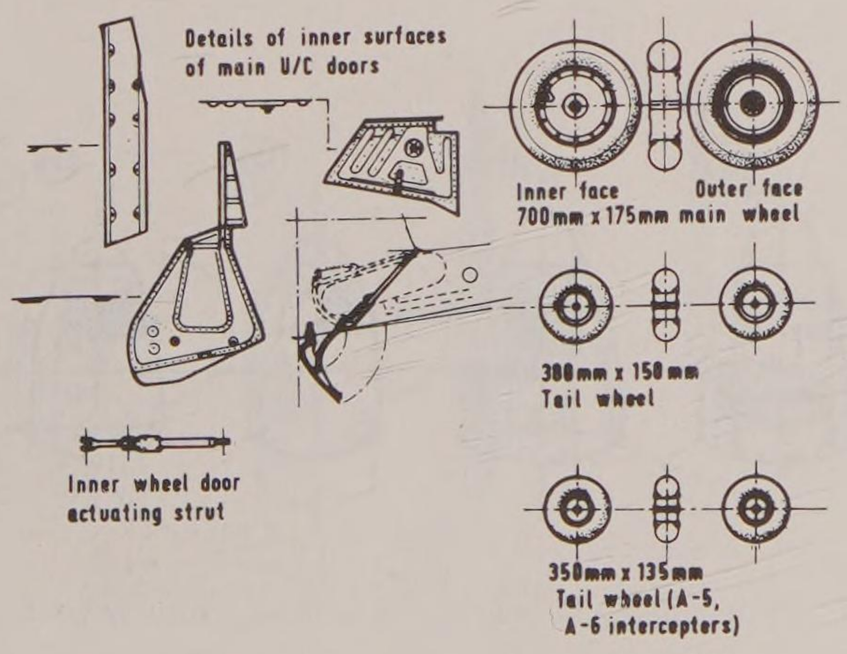
▲
Rear elevation, Fw 190A-6

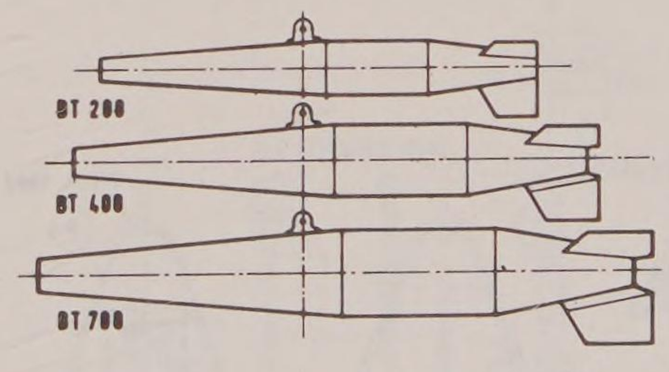
Scale
0 1 2 3 4 5 6 7 8 ft
0 1 2 m



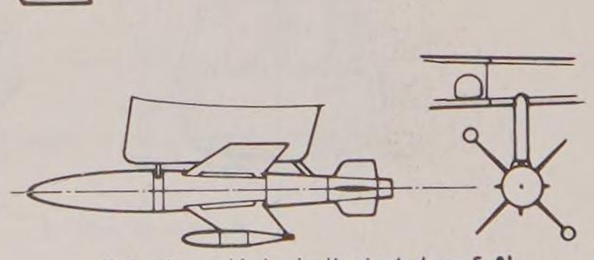

Detail of different styles of 300 litre tanks. The lower tank was only seen on aircraft in the closing weeks of the war
Flattened lower surface

Scrap view
Undercarriage details
▼

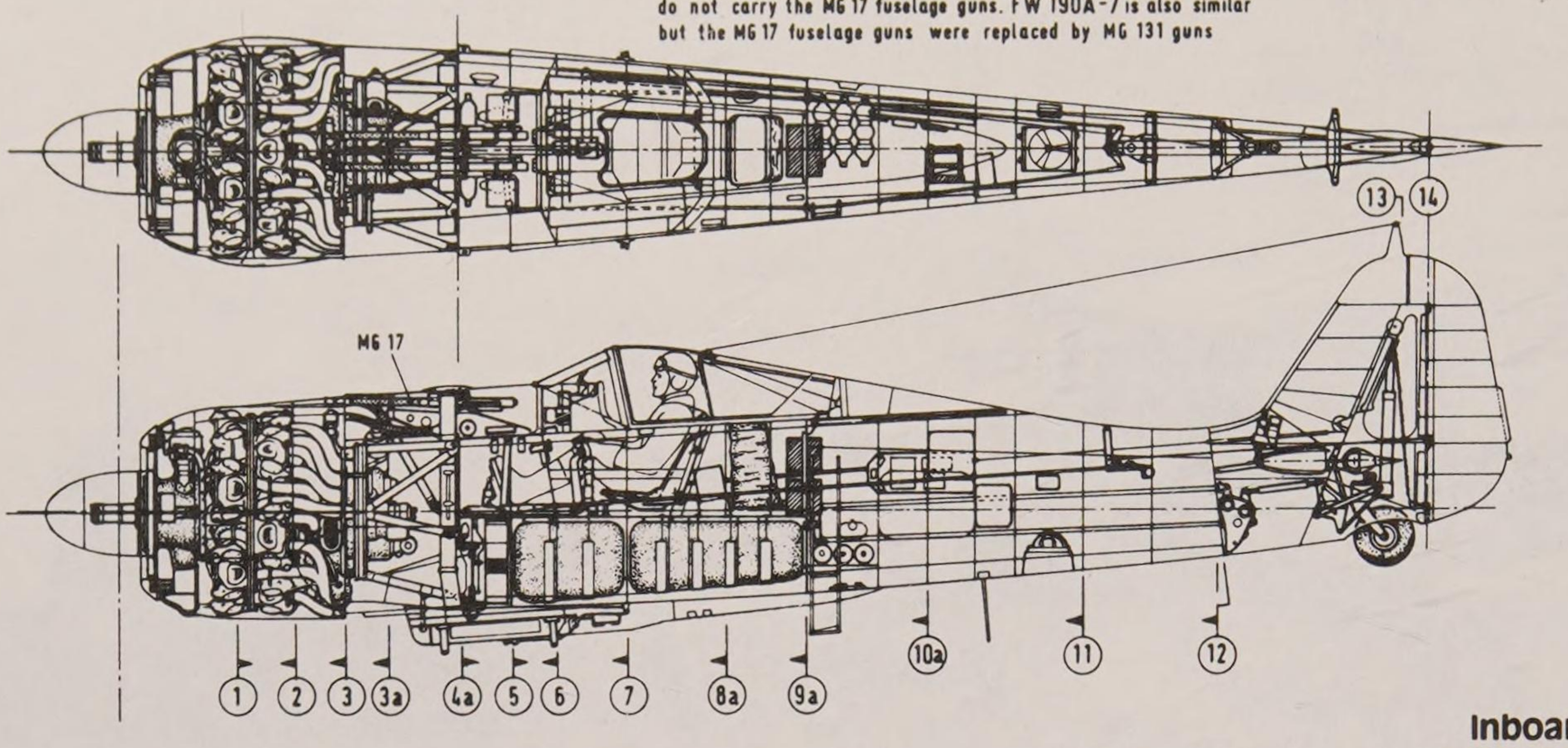




▲
Scrap views
Armament details



The two views below show internal details which are typical for FW 190A-5, A-6, F-2, & F-3. FW 1906-2 & G-2 are similar but do not carry the MG 17 fuselage guns. FW 190A-7 is also similar but the MG 17 fuselage guns were replaced by MG 131 guns



Scale

0 1 2 3 4 5 6 7 8 ft

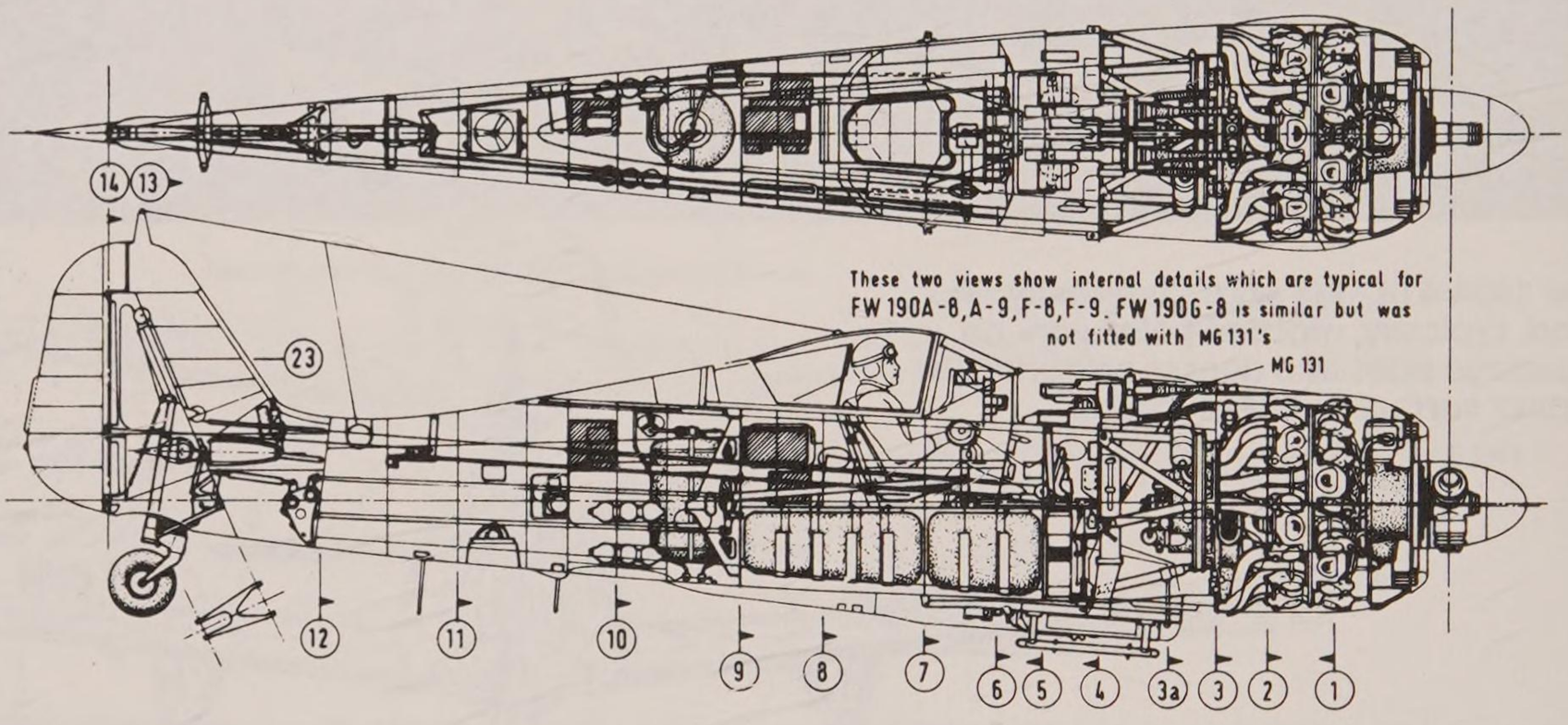
0 1 2 m

Inboard profile and plan view
See note for explanation

▼

▲

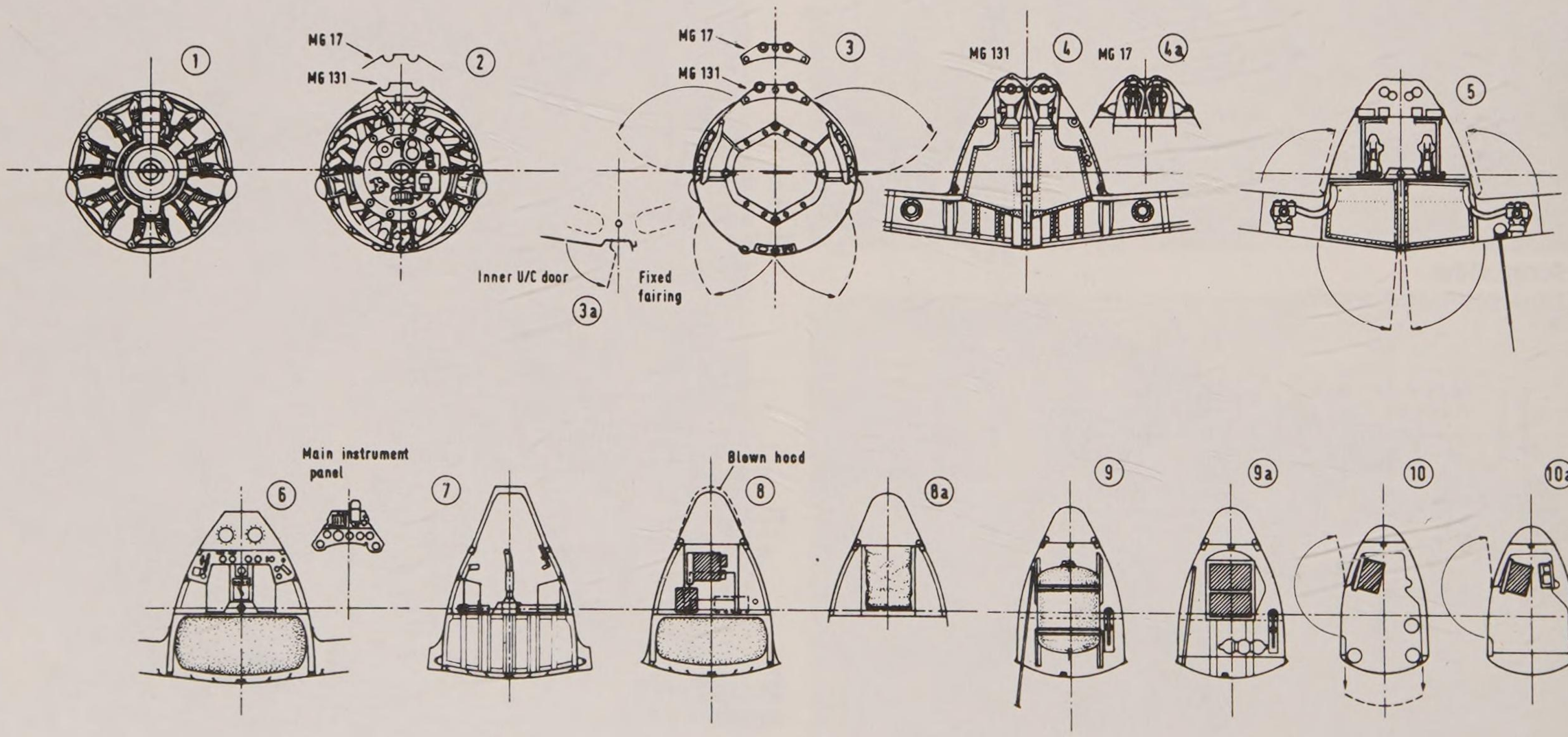
Inboard profile and plan view
See note for explanation

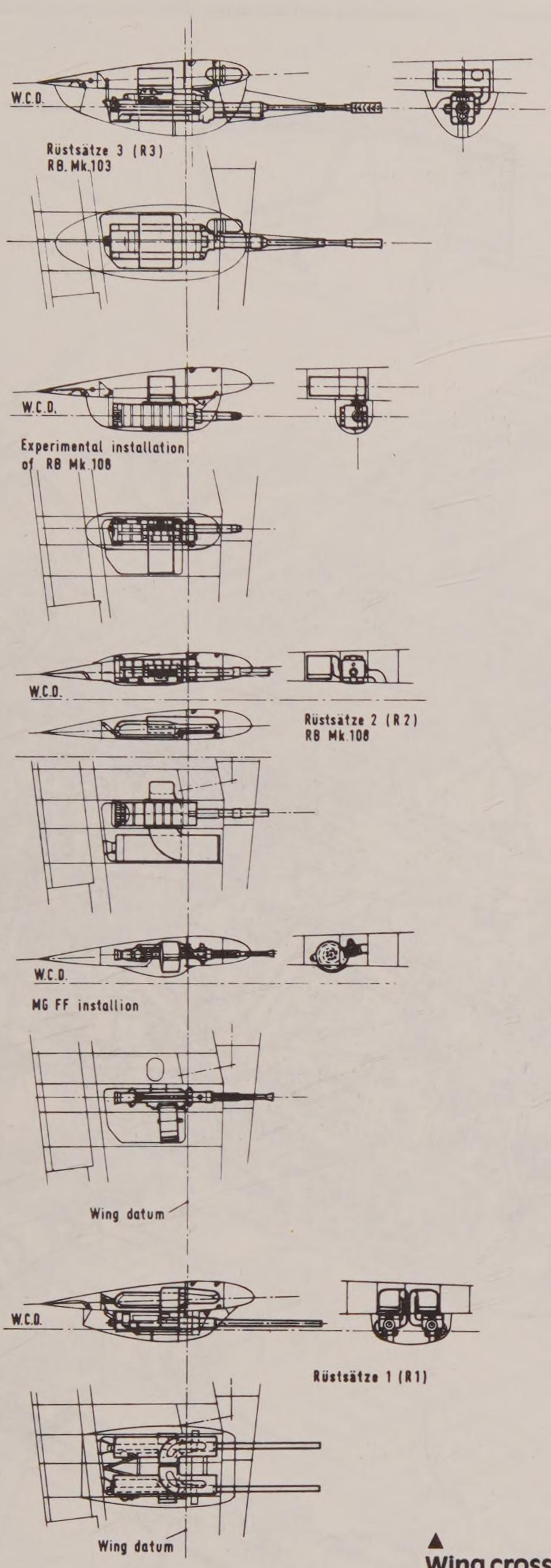


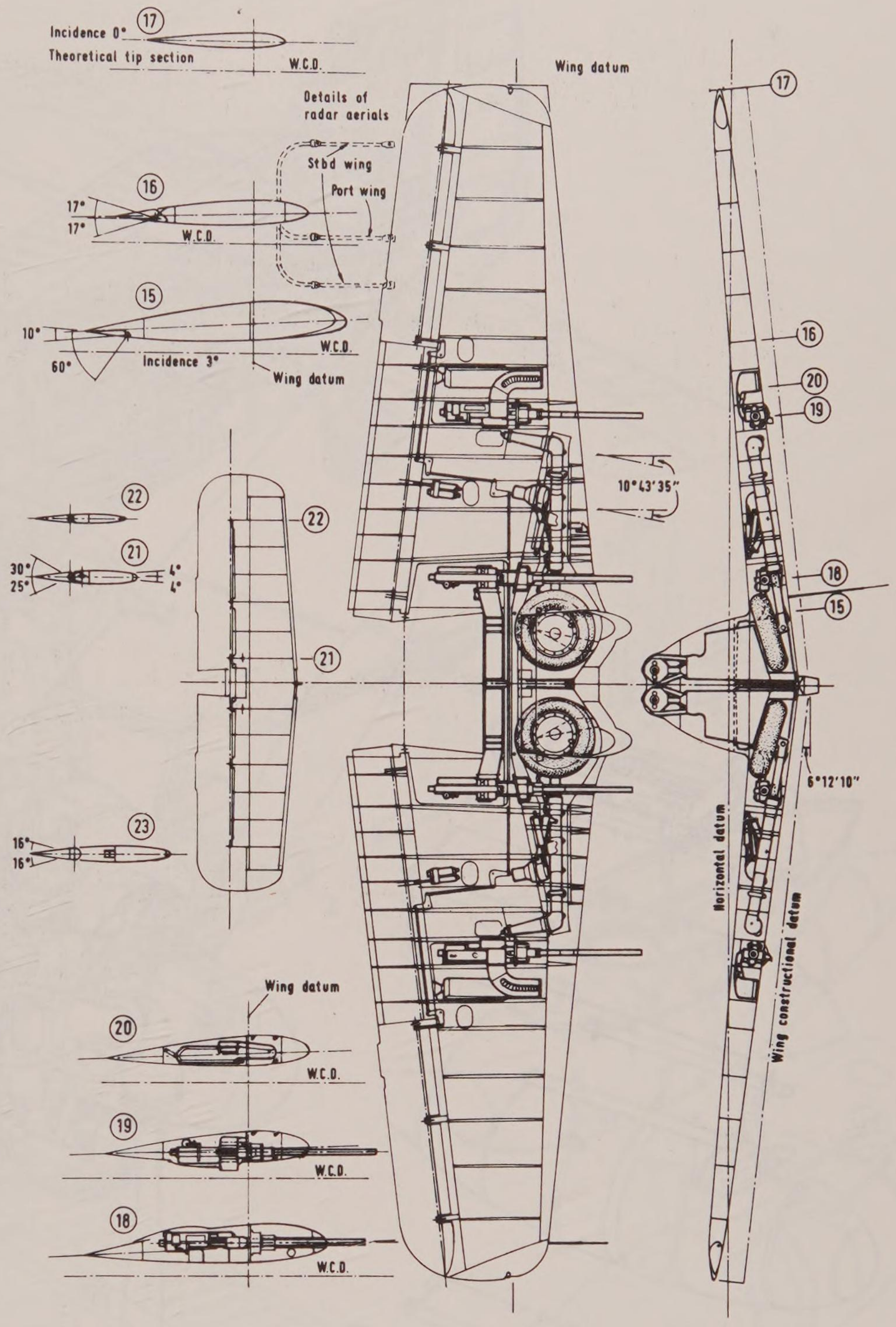
These two views show internal details which are typical for FW 190A-8, A-9, F-8, F-9. FW 190G-8 is similar but was not fitted with MG 131's

Fuselage cross-sections

▼

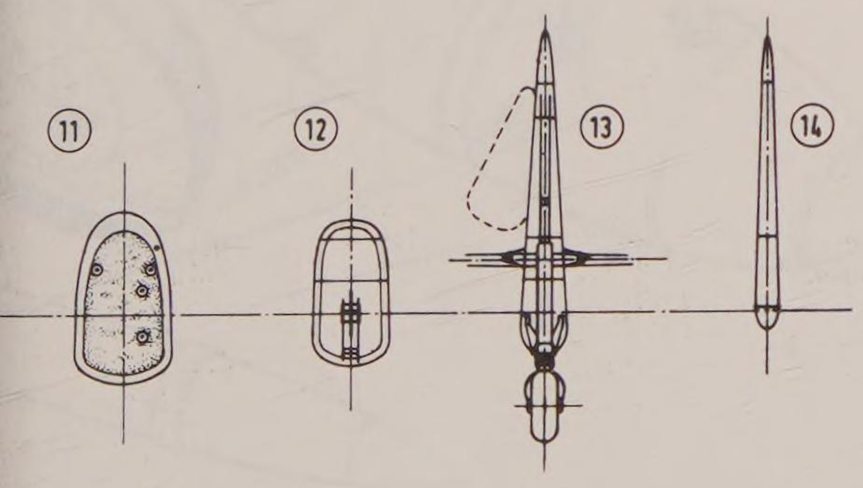


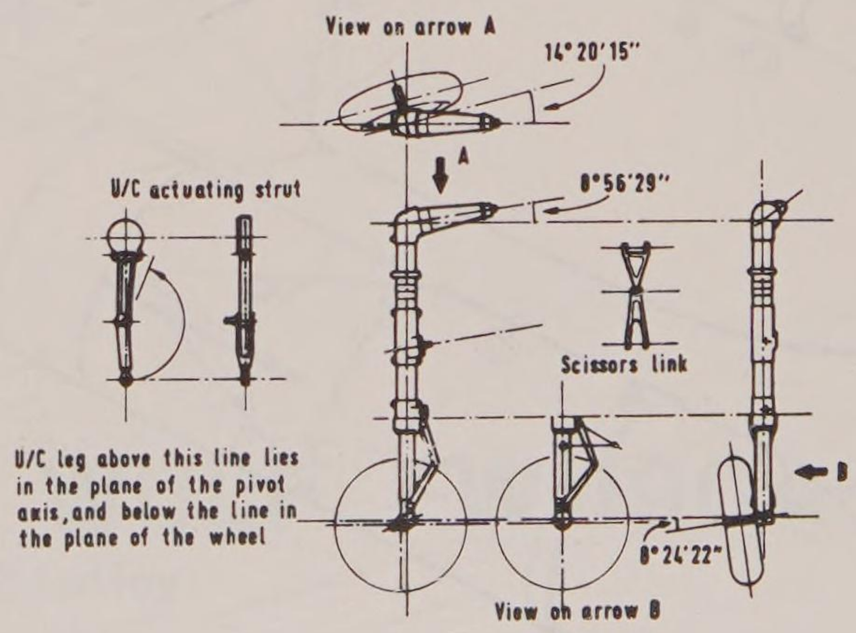


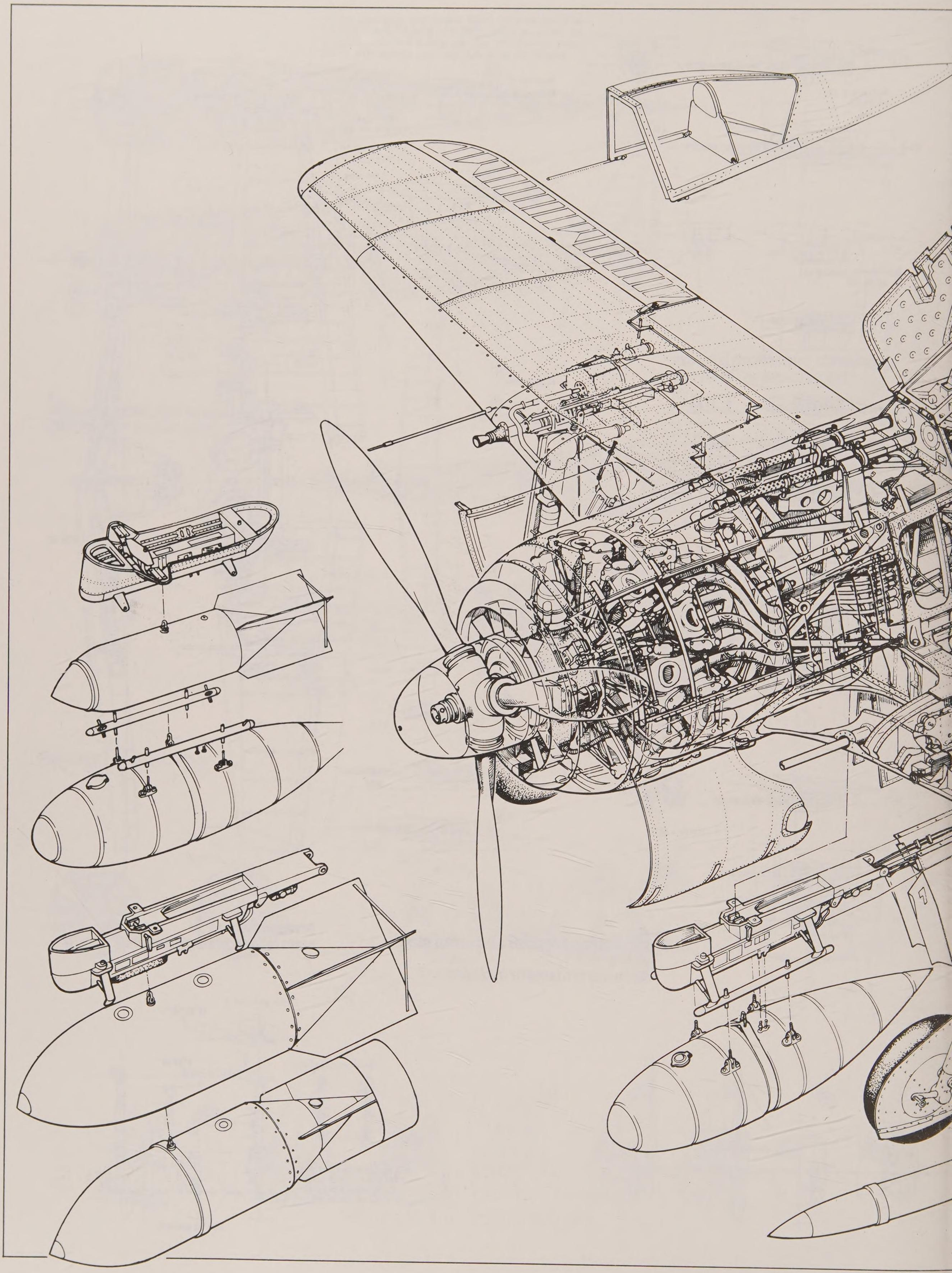


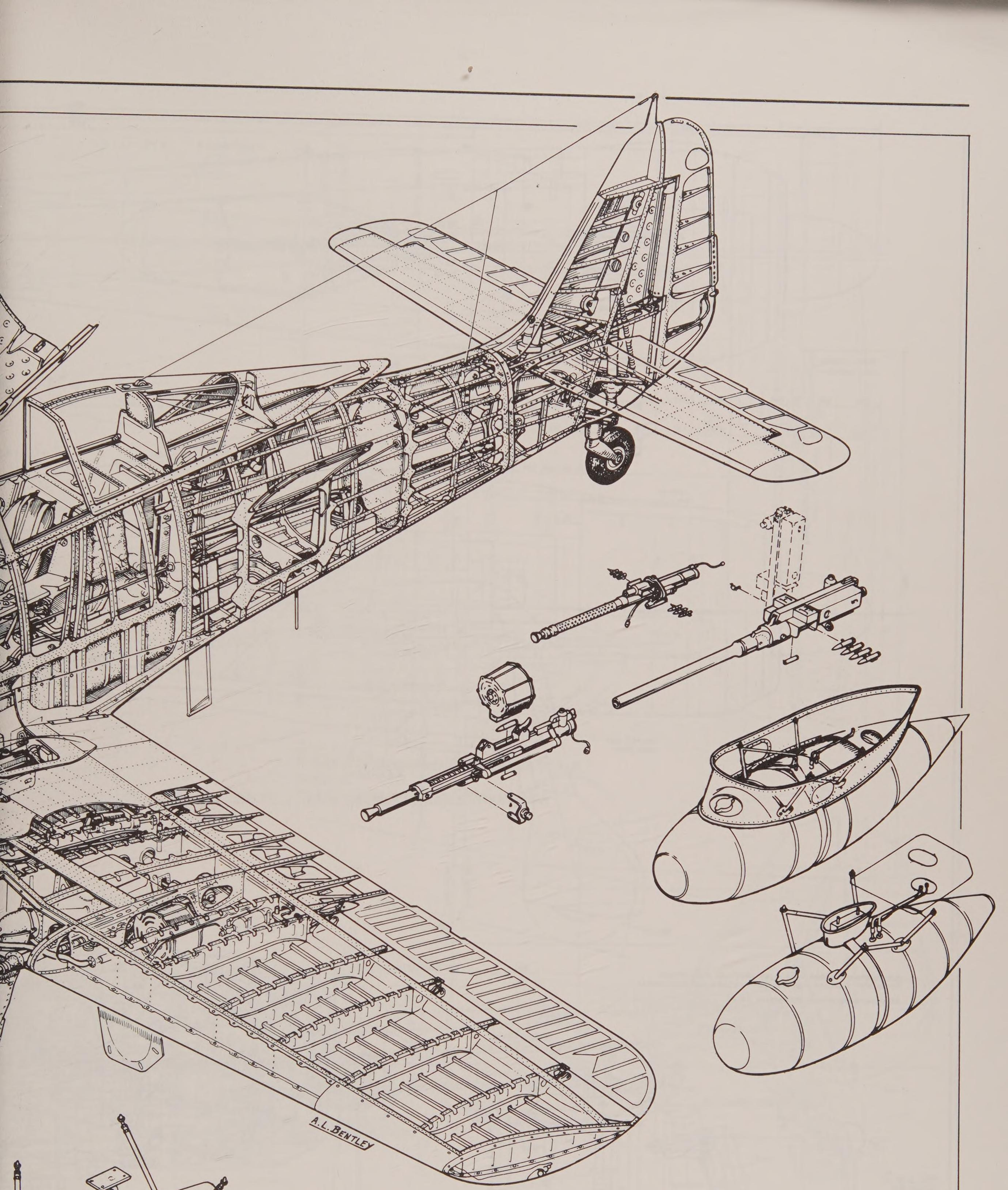
▲
Wing cross-sections and scrap plan views
Showing armament installations

Scrap views
Main undercarriage details
▼



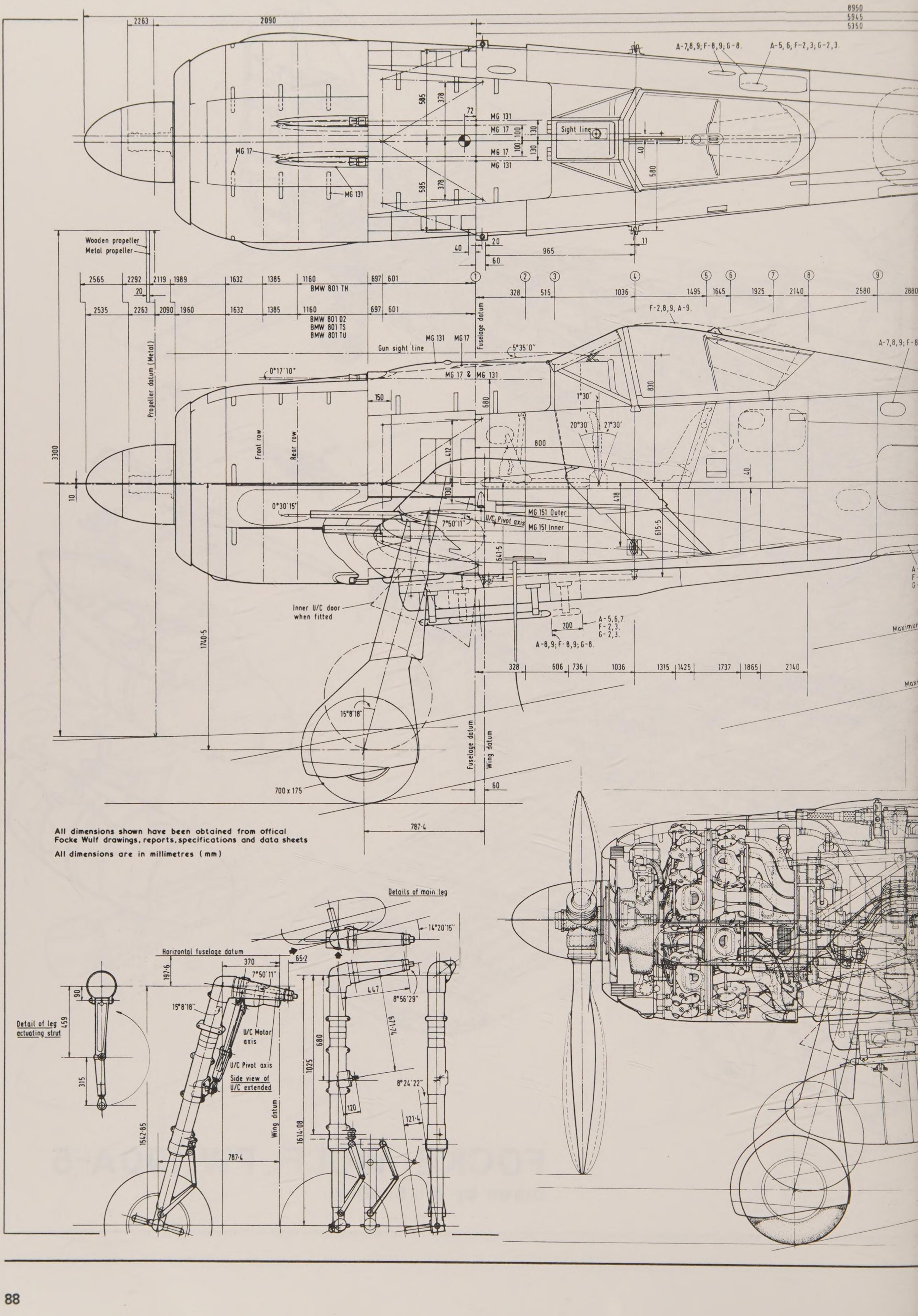


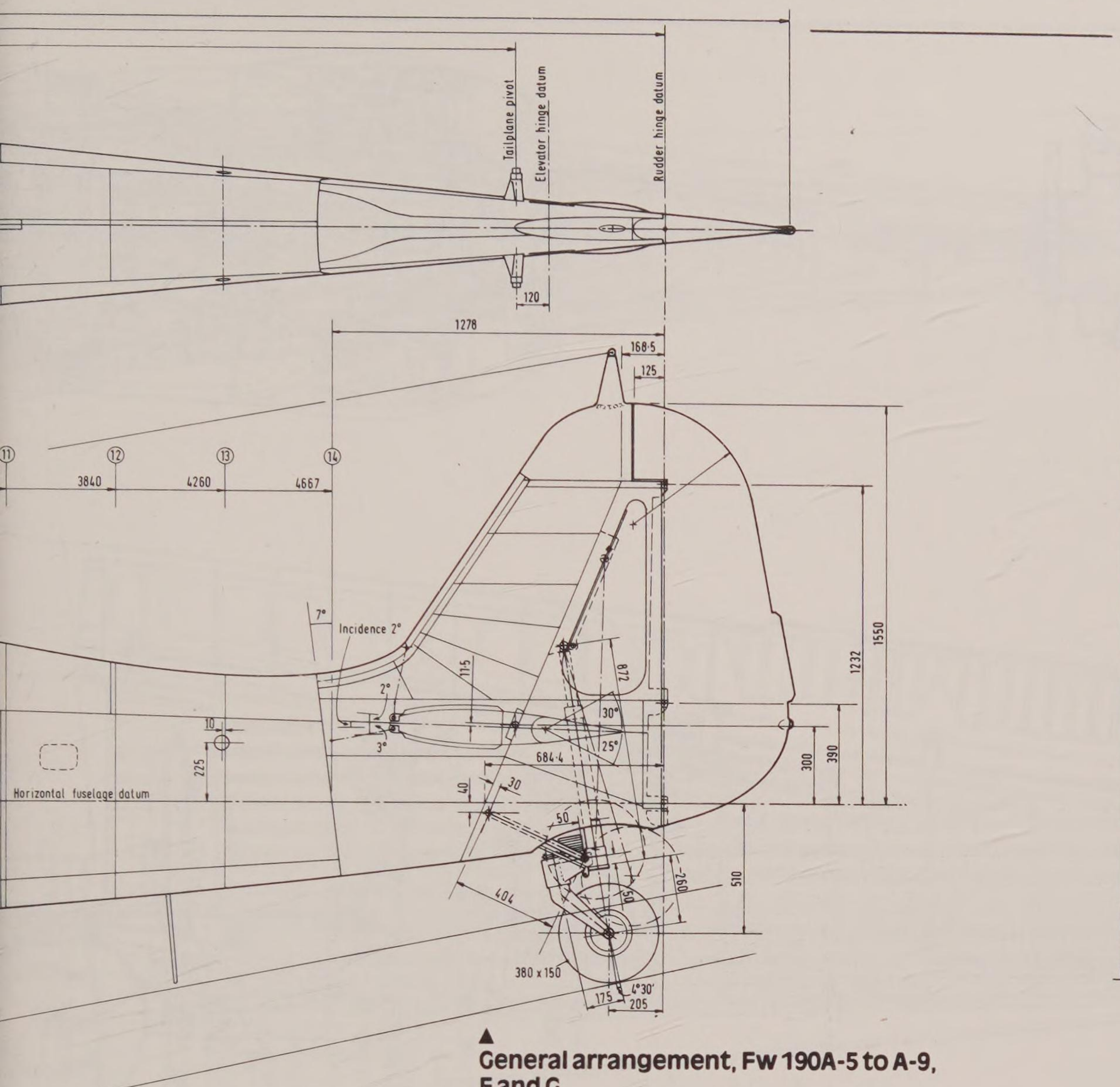


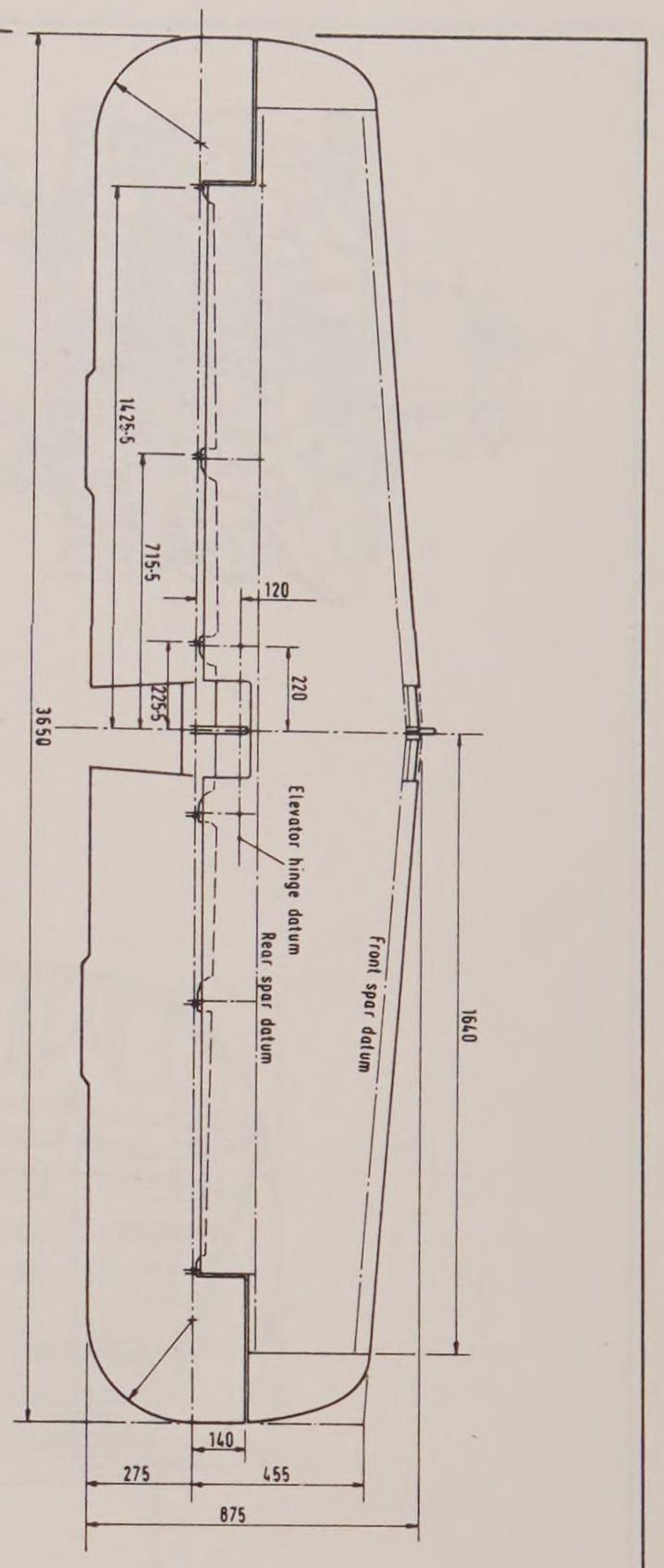


FOCKE WULF FW 190A-5

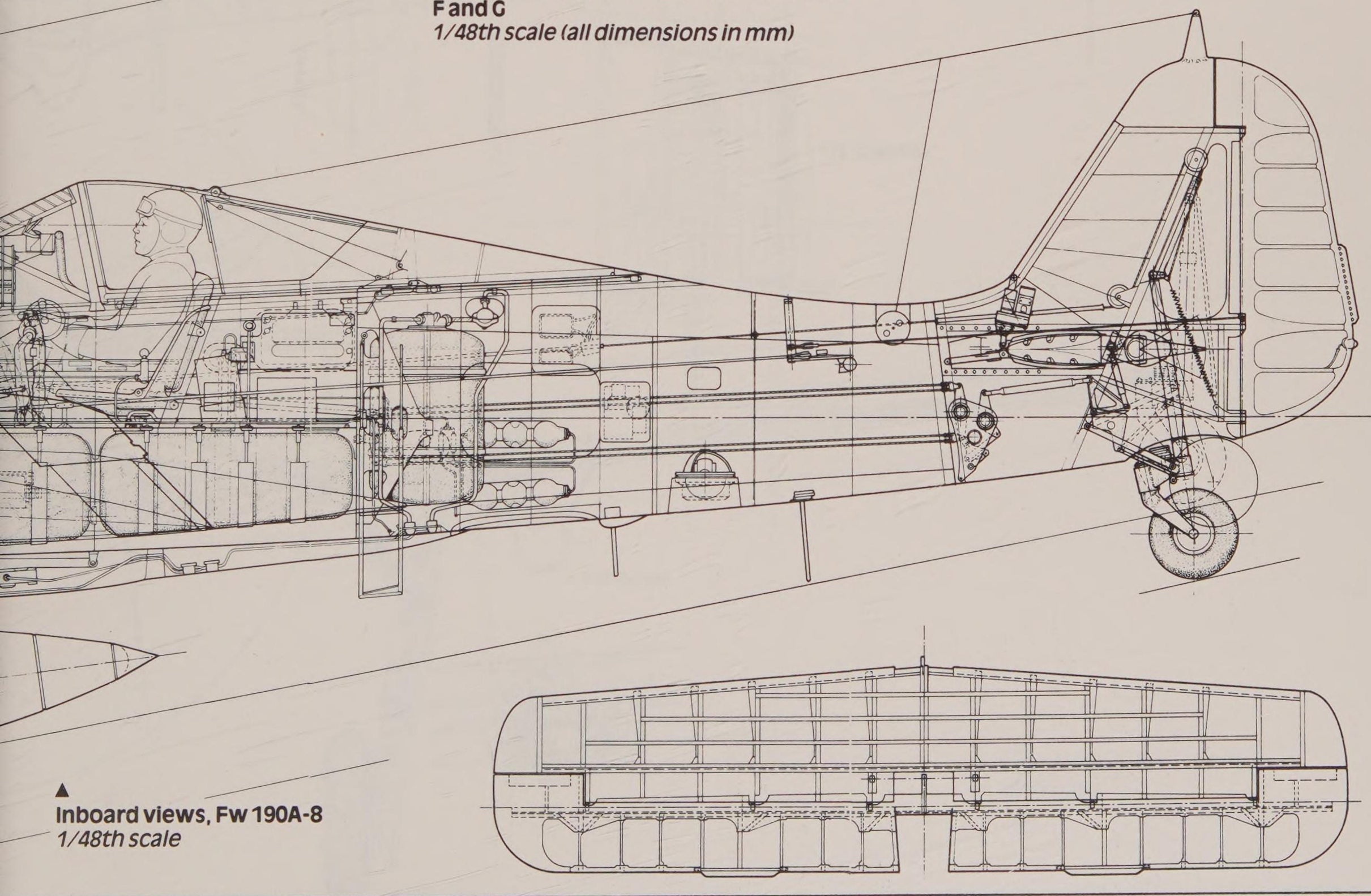
Drawn by A L Bentley


8950
5945
5350
2263
2090
A-7,8,9; F-8,9; G-8.
A-5, 6; F-2,3; G-2,3.
585
378
72
MG 131
MG 17
100
130
Sight line
40
580
11
20
965
60
Wooden propeller
Metal propeller
2565
2292
2119
1989
1632
1385
1160
697
601
BMW 801 TH
2535
2263
2090
1960
BMW 801 D2
BMW 801 TS
BMW 801 TU
Fuselage datum
328
515
1036
1495
1645
1925
2140
2580
F-2,8,9, A-9.
Propeller datum (Metal)
Gun sight line
5°35'0"
0°17'10"
MG 17 & MG 131
150
680
830
1°30'
20°30'
21°30'
800
3300
10
Front row
Rear row
412
130
418
40
0°30'15"
7°50'11"
U/C Pivot axis
MG 151 Outer
MG 151 Inner
641·5
615·5
Inner U/C door when fitted
200
A-5,6,7.
F-2,3.
G-2,3.
A-8,9; F-8,9; G-8.
1740·5
15°8'18"
606
736
1315
1425
1737
1865
Fuselage datum
Wing datum
60
700 x 175
787·4
All dimensions shown have been obtained from offical
Focke Wulf drawings, reports, specifications and data sheets
All dimensions are in millimetres (mm)
Details of main leg
14°20'15"
Horizontal fuselage datum
65·2
370
197·6
447
8°56'29"
671·74
90
459
Detail of leg
actuating strut
315
W/C Motor
axis
U/C Pivot axis
Side view of
U/C extended
1025
680
8°24'22"
120
121·4
1542·85
1614·08

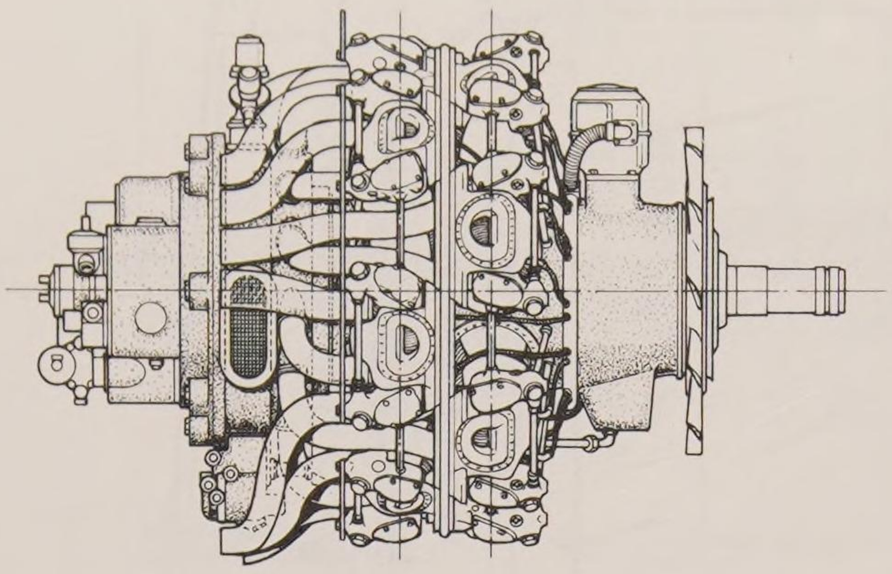


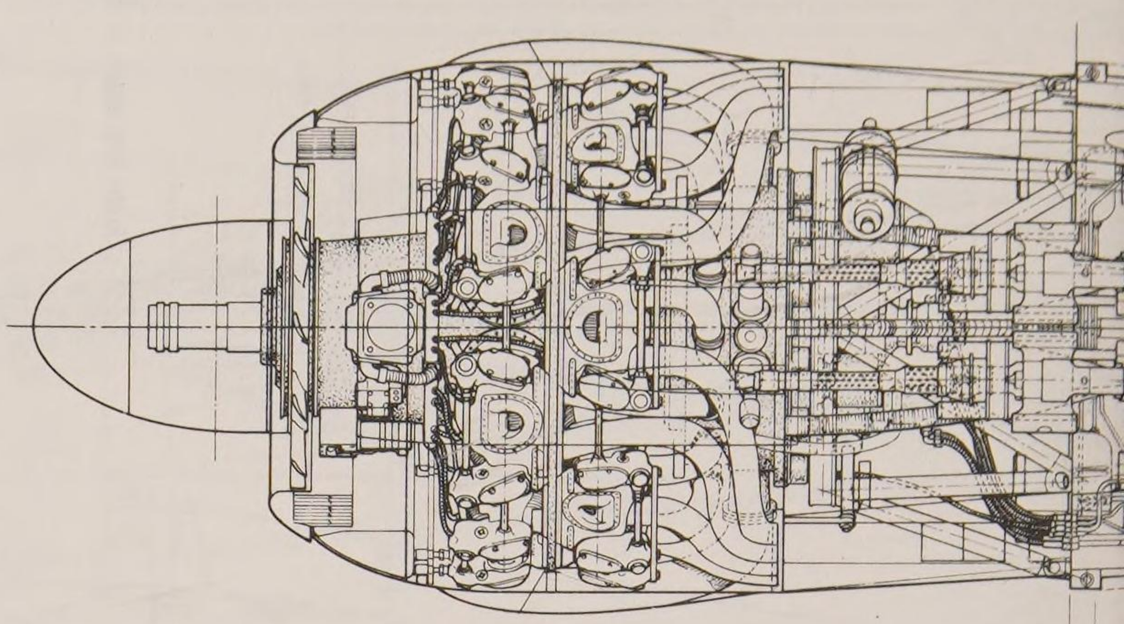


General arrangement, Fw 190A-5 to A-9, F and G
1/48th scale (all dimensions in mm)



Inboard views, Fw 190A-8
1/48th scale

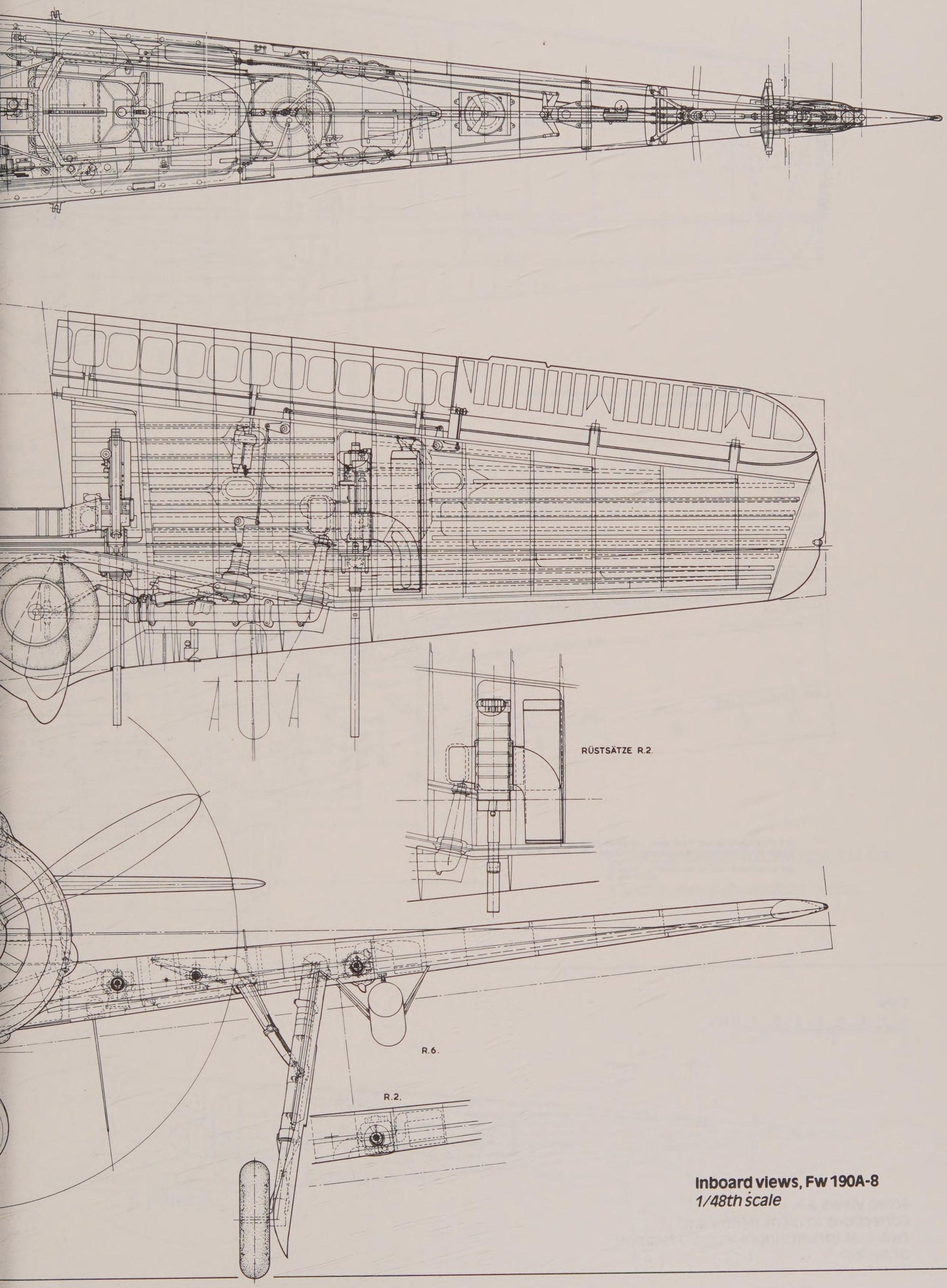




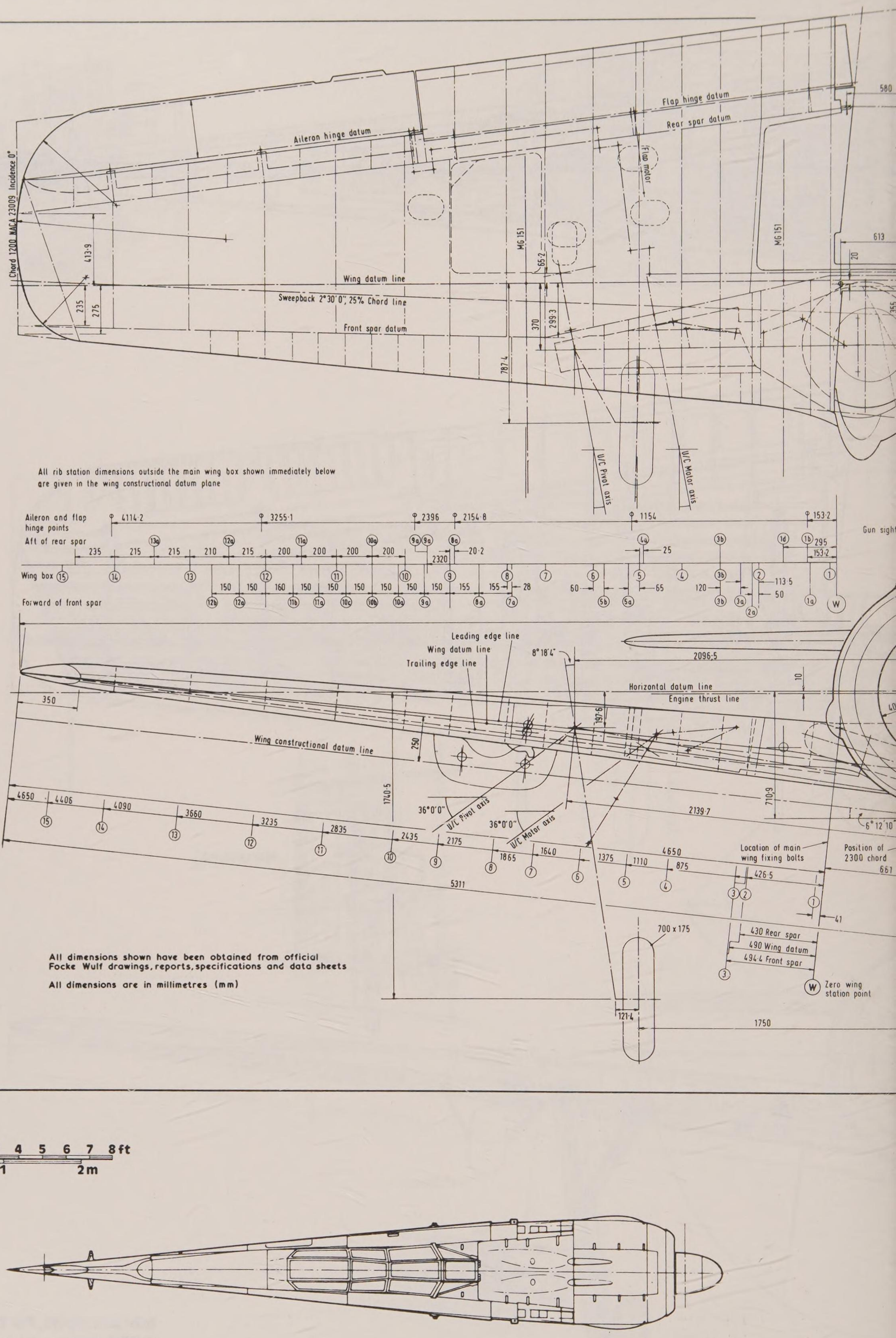
RÜSTSÄTZE R.I.

RÜSTSÄTZE R.6.

R.I.



Inboard views, Fw 190A-8
1/48th scale



All dimensions shown have been obtained from official Focke Wulf drawings, reports, specifications and data sheets

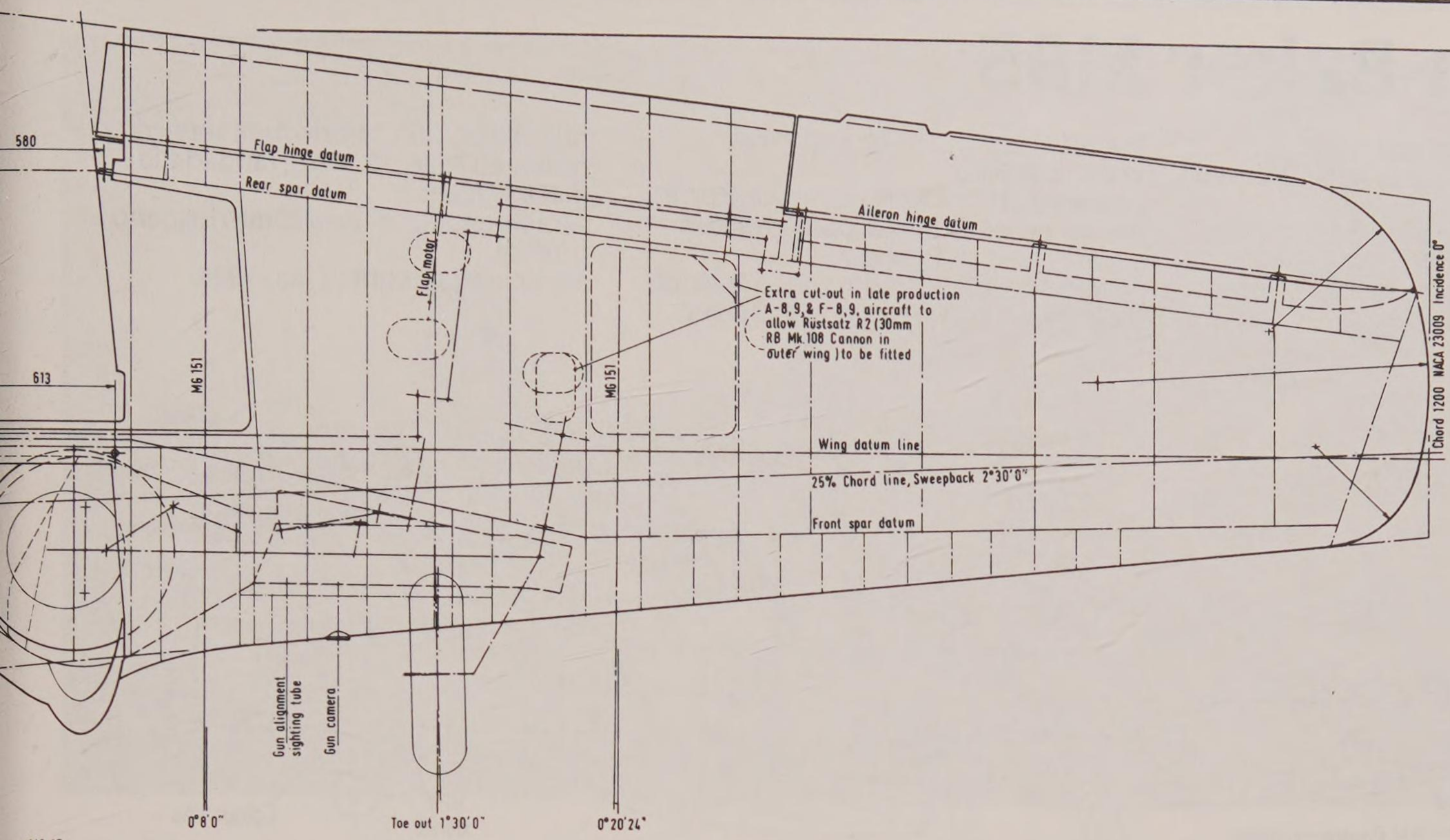
All dimensions are in millimetres (mm)

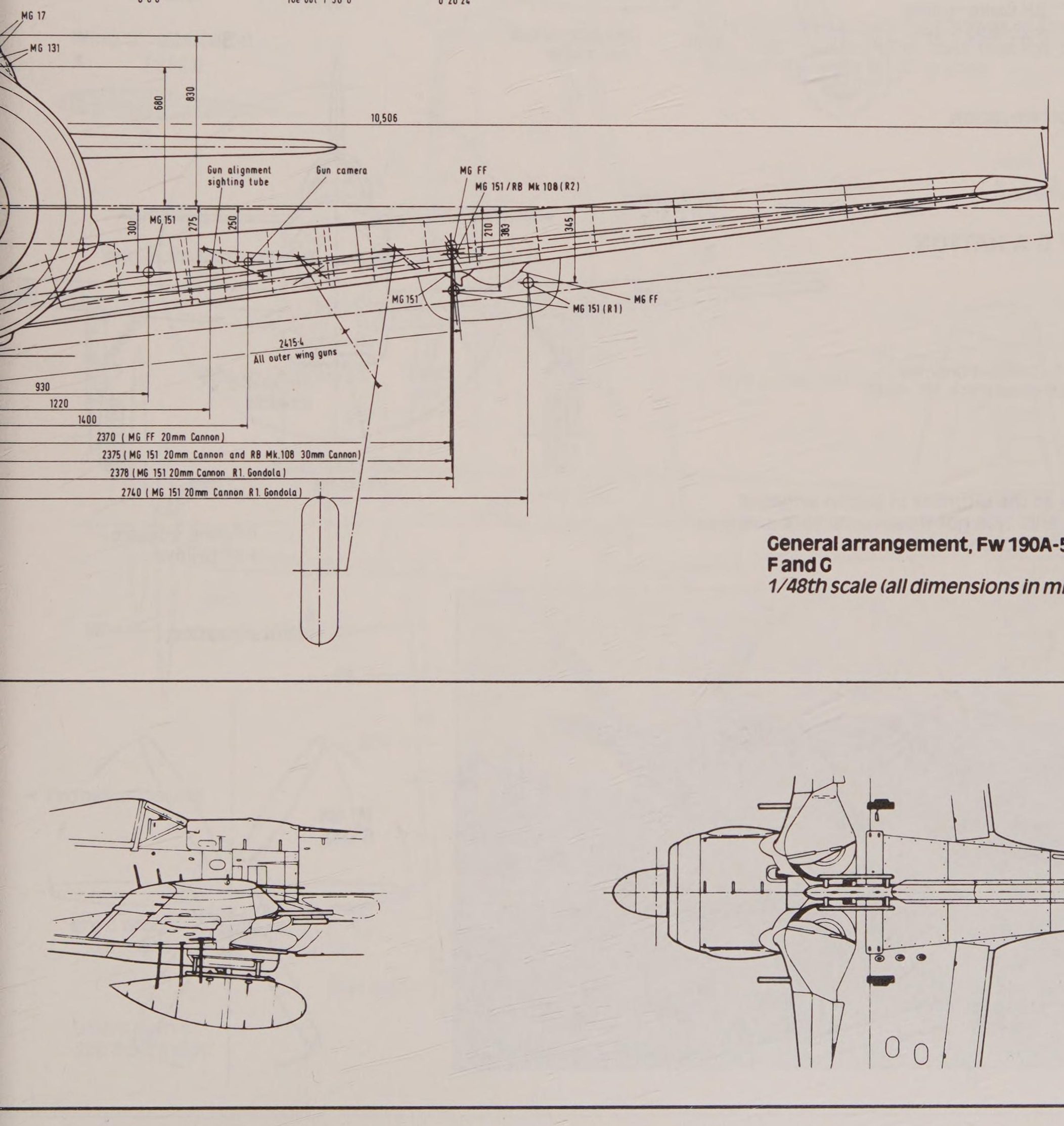
Scale

0 1 2 3 4 5 6 7 8 ft

0 1 2 m

Scrap views ▲►
Corrections to night fighter and two-seat variants (note inboard location of aerials)

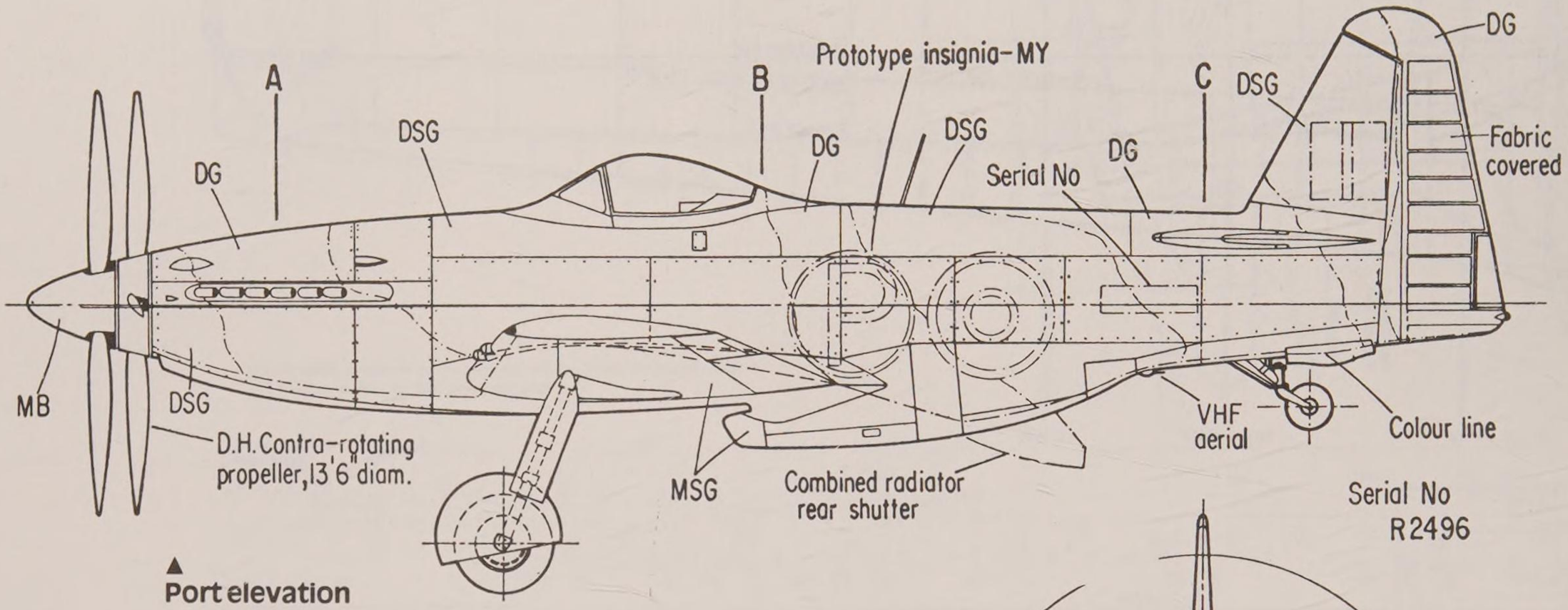




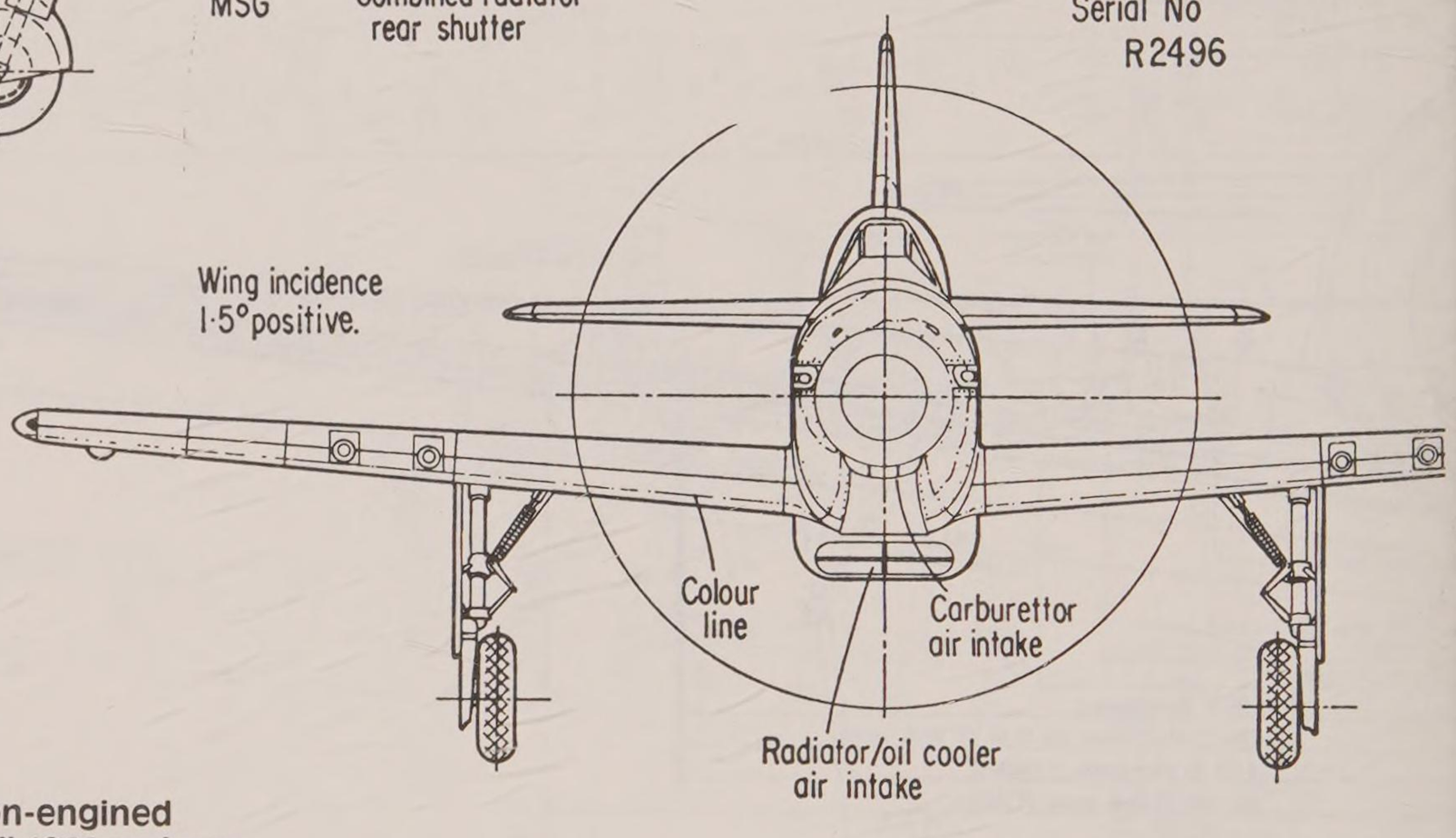
General arrangement, Fw 190A-5 to A-9, F and G
1/48th scale (all dimensions in mm)

Martin-Baker MB5

Country of origin: Great Britain.
Type: Prototype single-seat, land-based interceptor fighter.
Dimensions: Wing span 35ft 0in *10.67m*; length 37ft 9in *11.51m*; height 15ft 0in *4.57m*; wing area 262.64 sq ft *24.39m²*.
Weights: Empty 9233lb *4189kg*; normal loaded 11,000lb *4991kg*; maximum 12,090lb *5484kg*.
Powerplant: One Rolls-Royce Griffon 83 twelve-cylinder, liquid-cooled piston engine rated at 2340hp.
Performance: Maximum speed 460mph *740kph* at 20,000ft *6095m*; initial climb rate 3800ft/min *1160m/min*; service ceiling 40,000ft *12,190m*; range 1100 miles *1770km*.
Armament: Four fixed 20mm Hispano cannon.
Service: First flight 23 May 1944.



▲ **Port elevation**



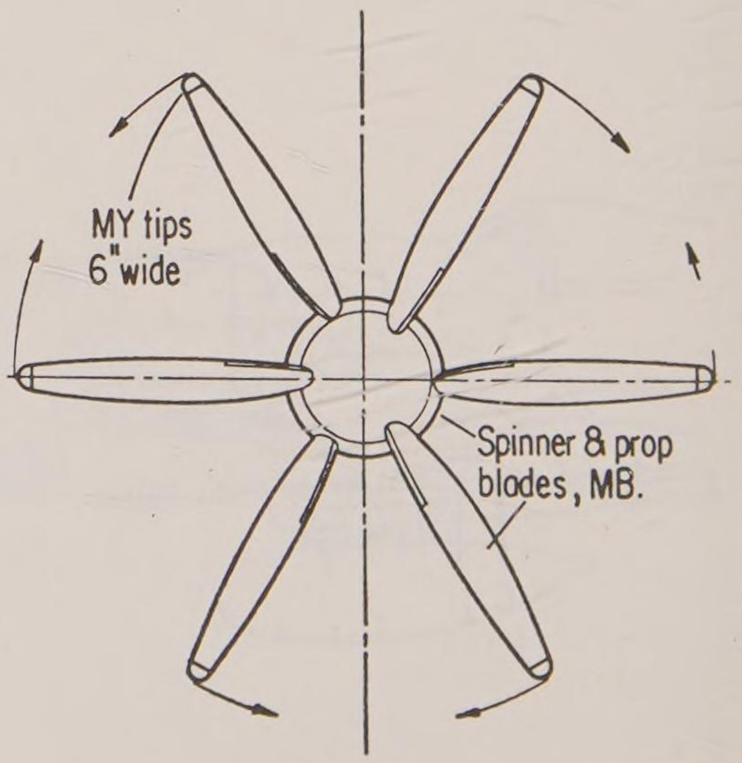
DRAWN BY G A HATTON

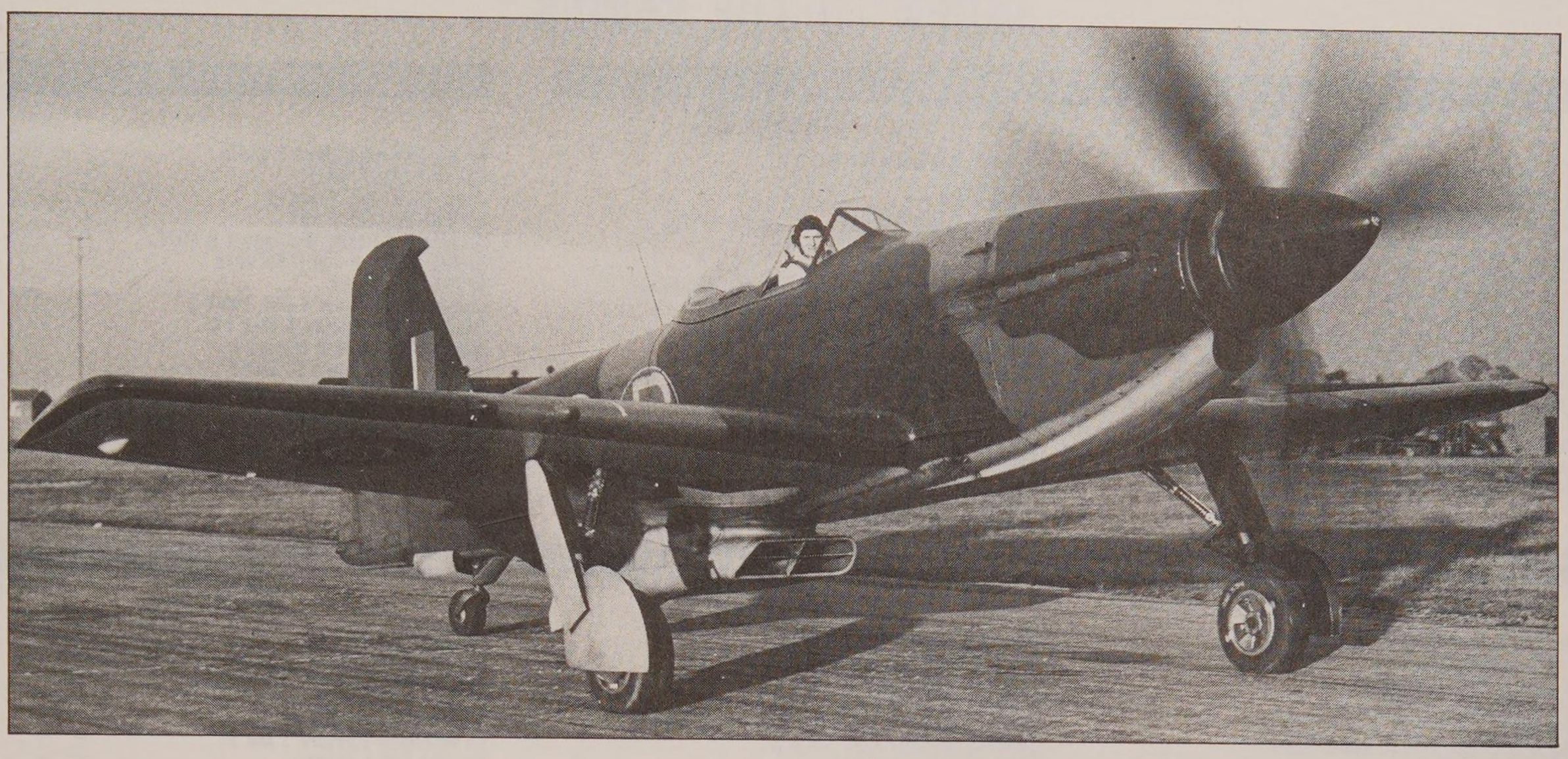
Colour code
DG – Dark Green; **DSG** – Dark Sea Grey; **MSG** – Medium Sea Grey; **MB** – Matt black; **MY** – Matt yellow.

Regarded by many as the ultimate in piston-engined fighter design, the MB5 was not flown until 1944 and was never to achieve production status.

▼

▲ **Front elevation**



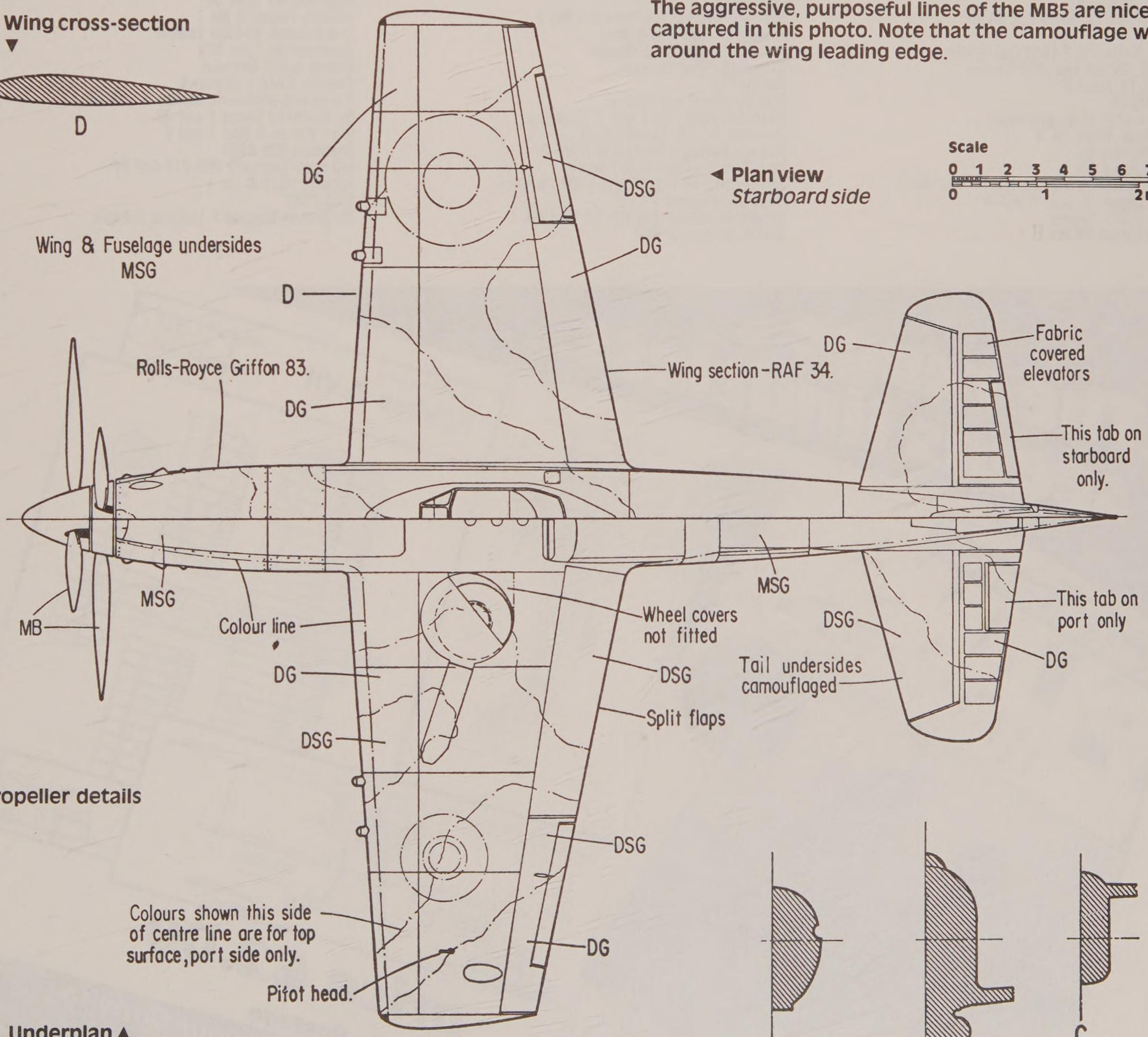


▲
The aggressive, purposeful lines of the MB5 are nicely captured in this photo. Note that the camouflage wraps around the wing leading edge.

Wing cross-section
▼

◄ **Plan view**
Starboard side

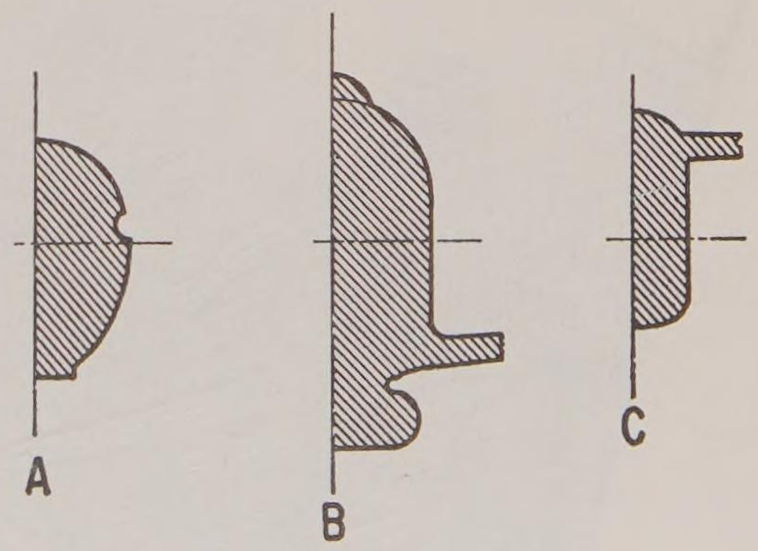
Scale
0 1 2 3 4 5 6 7 8 ft
0 1 2 m



◄ **Propeller details**

Underplan ▲
Starboard side

Fuselage cross-sections ►



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